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FLOOD INSURANCE STUDY

POLK COUNTY, FLORIDA
UNINCORPORATED AREAS

REVISED

OCTOBER 18, 1988

Federal Emergency Management Agency

COMMUNITY NUMBER - 120261

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

This publication incorporates revisions to the original Flood Insurance Study. These revisions are presented in Section 9.0.

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FLOOD INSURANCE STUDY FOR UNINCORPORATED AREAS OF POLK COUNTY, FLORIDA

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study investigates the existence and severity of flood hazards in the unincorporated areas of Polk County, Florida, and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study will be used to convert Polk County to the regular program of flood insurance by the Federal Emergency Management Agency (FEMA). Local and regional planners will use this study in their efforts to promote sound flood plain management.

In some states or communities, flood plain management criteria or regulations may exist that are more restrictive or comprehensive than those on which these Federally-supported studies are based. These criteria take precedence over the minimum Federal criteria for purposes of regulating development in the flood plain, as set forth in the Code of Federal Regulations at 44 CFR, 60.3 (d). In such cases, however, it shall be understood that the state (or other jurisdictional agency) shall be able to explain those requirements and criteria.

1.2 Authority and Acknowledgments

The source of authority for this flood insurance study is the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study were performed by the U.S. Geological Survey for the Federal Emergency Management Agency under Interagency Agreement No. IAA-H-9-77, Project Order No. 25 (6-23-77). This study was completed in September 1980.

1.3 Coordination

The Consultation Coordination Officer (CCO), appointed by the Federal Emergency Management Agency, organized the first community meeting, held on July 13, 1977. This meeting, attended by representatives of Polk County, FEMA, and the U.S. Geological Survey (study contractor), was held to explain the nature and purpose of the Flood Insurance Study.

The Southwest Florida Water Management District (SWFWMD) office in Brooksville, Florida, was contacted to resolve differences in lake stage frequency data for Polk County and to obtain operation schedules for structures P-5, P-6, P-7, and P-8, which control the outflow from Lakes Henry, Smart, Fannie, and Hamilton, respectively.

The Jacksonville District, U.S. Army Corps of Engineers was also contacted to coordinate lake flood stages in the Osceola County study and to reconcile differences in flood data by the U.S. Army Corps of Engineers and the U.S. Geological Survey for Saddle Creek and Lake Hancock. A follow-up coordination meeting on Lake Hancock was also held with SWFWMD personnel.

The Florida Department of Transportation provided 1960 flood elevations along Interstate Highway 4 in the Green Swamp area.

Contact was maintained during the course of this study with the Polk County Public Works Department to obtain drainage ditch details and reference mark elevations. An interim review meeting was held with Polk County officials on September 17, 1980.

Results of the Flood Insurance Study were reviewed at the final Consultation and Coordination meeting held on April 19, 1982. In attendance were representatives of the U.S. Geological Survey, FEMA, and Polk County. The study was acceptable to the community.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the unincorporated area of Polk County, Florida. The area of study is shown on the Vicinity Map (Figure 1). The limits of detailed and approximate studies in Polk County were determined by FEMA, with county officials and study contractor at the meeting on July 13, 1977.

Flooding sources studied by detailed methods of analysis were: Blackwater Creek Tributary, Haines City Drainage Canal, Itchepackesassa Creek, Lake Gibson Drain, Lake Lena Drain, Lake Parker Drain, Lake Rosalie Tributary, Lester Lake Drain, Mud Lake Drain, North Fork Lake Rosalie Tributary, North Prong Alafia River, Peace River Drainage Canal, Peace Creek Drainage Canal, Peace River, Poley Creek, Saddle Creek, Bay Lake, Big Gum Lake, Bonnet Lake, Clearwater Lake, Crooked Lake, Engineers Lake, Gum Lake, Lake Agnes, Lake Alfred, Lake Ariana, Lake Arietta, Lake Buffum, Lake Clinch, Lake Conine, Lake Cummings, Lake Daisy, Lake Deeson, Lake Dexter, Lake Echo, Lake Eloise, Lake Fannie, Lake Florence, Lake Garfield, Lake George, Lake Gibson, Lake Haines, Lake Hamilton, Lake Hammock, Lake Hancock, Lake Hartridge, Lake Helene, Lake Henry, Lake John, Lake Juliana, Lake Lena, Lake Lowery, Lake Lucerne, Lake Lulu, Lake Mariam, Lake Mariana, Lake Marion, Lake Mattie, Lake Otis, Lake Parker, Lake Pansy, Lake Pierce, Lake Rochelle, Lake Rosalie, Lake Roy, Lake Shipp, Lake Smart, Lake Van, Lake Weohyakapka, Lake Whistler, Lake Winterset, Lester Lake, Little Lake Agnes, Little Lake Hamilton, Mine Pits Southeast of Lakeland (Pits 1, 2, and 3), Mud

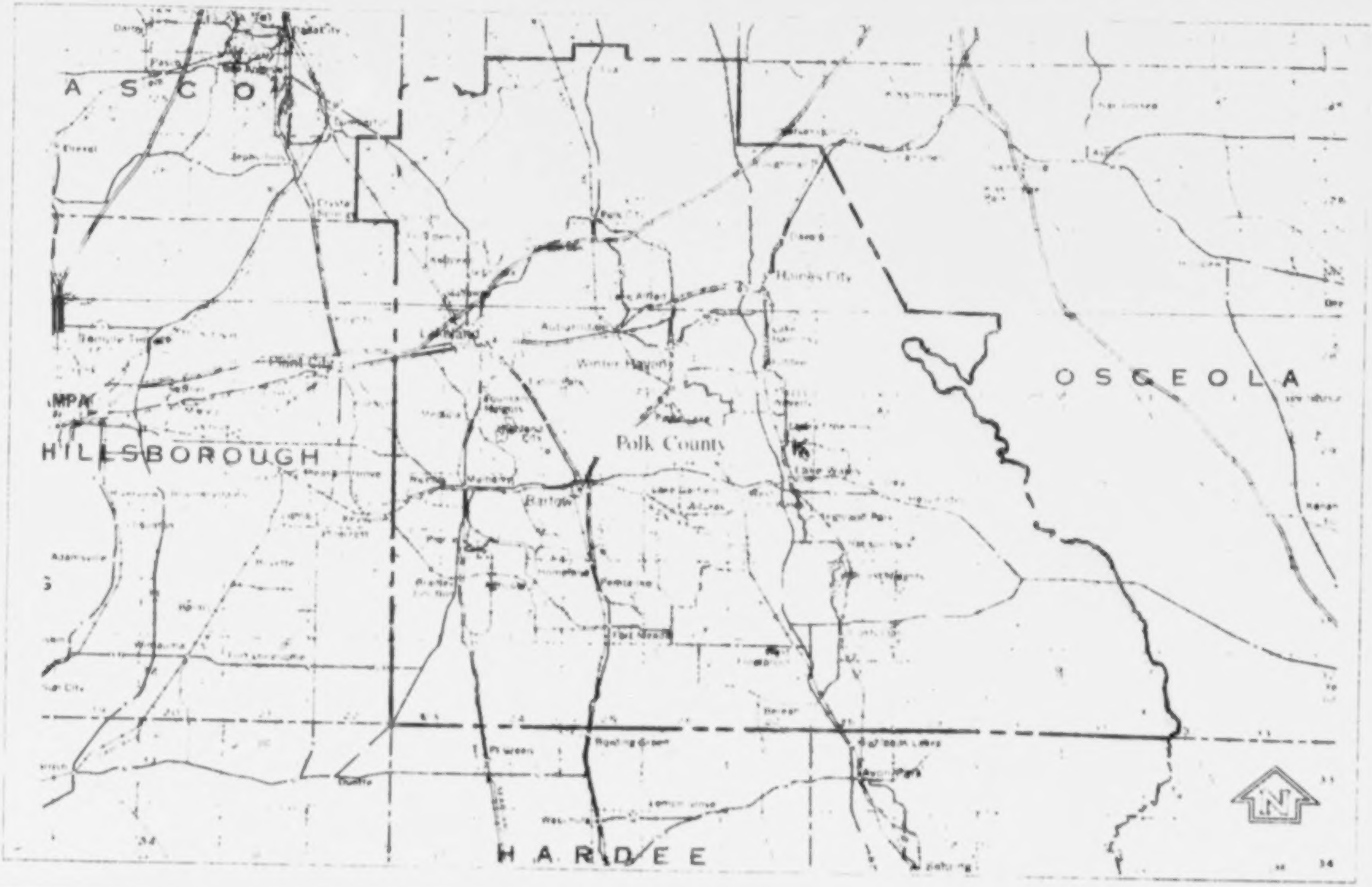
A S C O
HILLSBOROUGH
OSCEOLA
HARDEE
Polk County
Lakeland
Plant City
Auburndale
Winter Haven
Haines City
Bartow
Fort Meade
Bowling Green
Avon Park
Lake Wales
N

FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

APPROXIMATE SCALE

8 0 8 16 24 MILES

VICINITY MAP

Lake, Ned Lake, Reedy Lake, Saddlebag Lake, Saint Claire Lake, Skyview Lake, Southeast Lakes, Tangerine Lake, Tower Lake, and various ponding areas.

Flooding sources studied by approximate methods of analysis were: Lake Hatchina, Tiger Lake, Peace Creek Drainage Canal tributaries southwest of Lake Hamilton, and Green Swamp.

Approximate methods of analysis were used to study those areas having a low development potential or a minimal flood hazard. The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development or proposed construction for the next five years, through 1985.

2.2 Community Description

Polk County is in the center of the Florida Peninsula, about equidistant from the Atlantic Ocean and the Gulf of Mexico. Polk County has a land area of 1,858 square miles and is the fourth largest county in Florida. The county averages 40 miles wide by 48 miles long.

A ridge, referred to as the Central Highlands (Reference 1), extends north and south through most of Polk County. Land-surface elevations are as low as 50 feet and as high as 305 feet. Because of this topographic high, water flows in all directions from the county. The eastern 35 percent of the county is in the Kissimmee River basin and drains eastward and southward into the Kissimmee River. The southcentral 35 percent is in the Peace River basin and drains into the Peace River. Along the western boundary, 8 percent of the county is in the Alafia River basin and drains into the Alafia River and 4 percent is in the Hillsborough River basin and drains to the west into the Hillsborough River. On the north, the St. Johns River basin drains water from 3 percent of the county northward into the headwaters system of the Oklawaha River, a tributary of the St. Johns River. The drainage basins are shown in Figure 2. The western boundary of the Kissimmee River basin follows the top of the Central Highlands ridge.

The climate of Polk County is subtropical. The average temperature is about 72 degrees F and the average annual rainfall is approximately 54 inches. More than half of the rain falls during June, July, August, and September.

Since Polk County was formed in 1861, its population has steadily increased to 295,541 in 1979 (Reference 2). There are 17 incorporated cities and towns in Polk County having a combined population of 127,01[illegible]. Lakeland is the largest city in Polk County, having a population of 46,[illegible]. Winter Haven with a population of 20,1[illegible]3 is the second largest city in Polk County and is followed by Bartow, the county seat, with a population of 13,870.

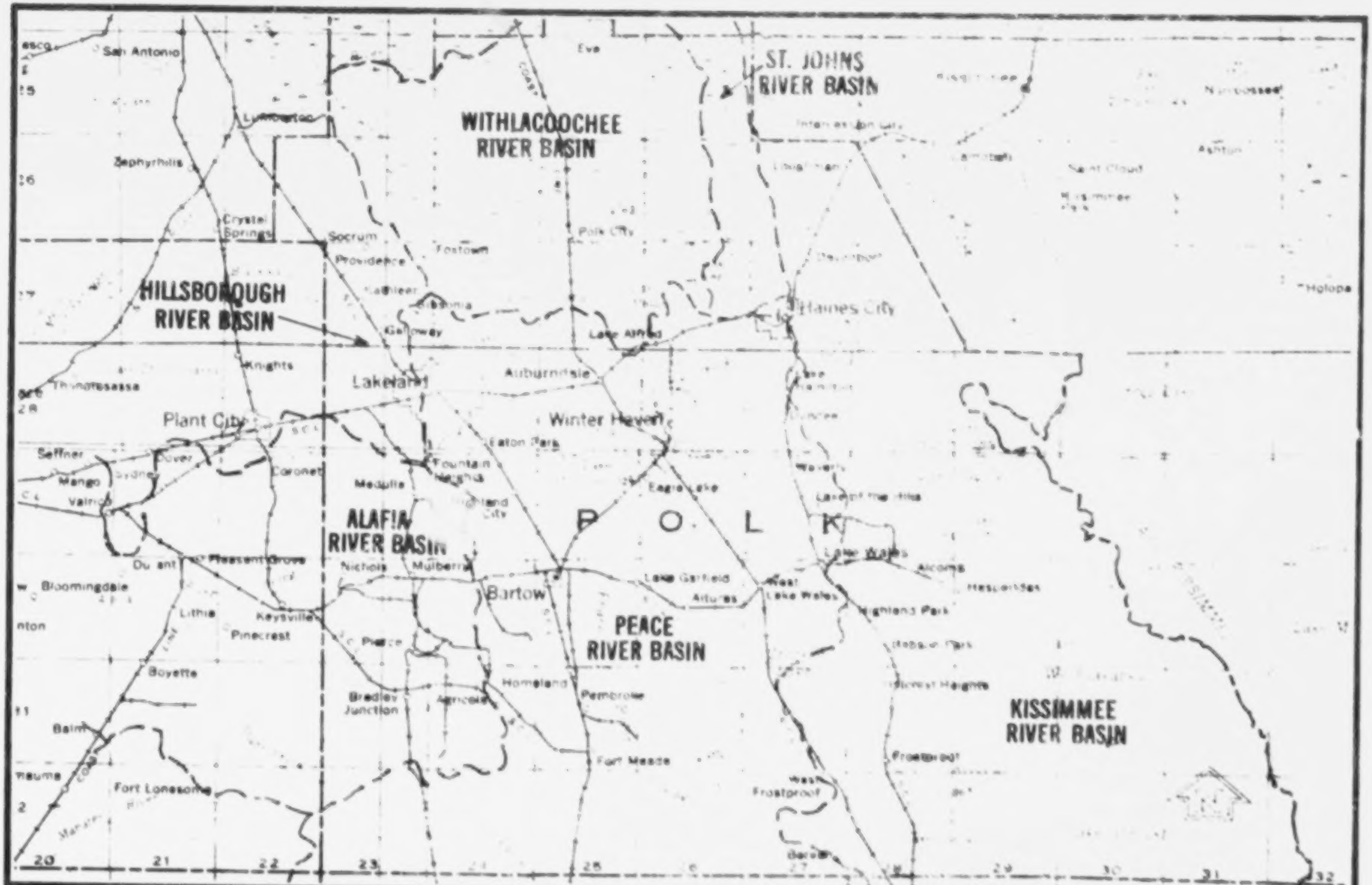
WITHLACOOCHEE RIVER BASIN
ST. JOHNS RIVER BASIN
HILLSBOROUGH RIVER BASIN
ALAFIA RIVER BASIN
PEACE RIVER BASIN
KISSIMMEE RIVER BASIN
P O L K
San Antonio
Eva
Zephyrhills
Crystal Springs
Socrum
Providence
Fostown
Polk City
Davenport
Haines City
Lake Alfred
Galloway
Knights
Thonotosassa
Lakeland
Auburndale
Plant City
Winter Haven
Eaton Park
Seffner
Dover
Mango
Sydney
Valrico
Coronet
Fountain Heights
Medulla
Highland City
Eagle Lake
Lake Hamilton
Dundee
Waverly
Lake of the Hills
Lake Wales
Alcoma
Nichols
Mulberry
Bartow
Lake Garfield
Alturas
West Lake Wales
Highland Park
Hesperides
Durant
Pleasant Grove
Bloomingdale
Lithia
Keysville
Pinecrest
Pierce
Boyette
Bradley Junction
Agricola
Homeland
Pembroke
Babson Park
Hillcrest Heights
Balm
Fort Lonesome
Fort Meade
Frostproof
West Frostproof
Saint Cloud
Kissimmee Park
Ashton
Holopaw
Narcoossee
20
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FIGURE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

APPROXIMATE SCALE

4 0 8 16 24 MILES

5

DRAINAGE BASINS

The unincorporated area population is 168,529. Most of the population is concentrated along the ridge area in central and northeastern Polk County.

Polk County has a diversified economy. The principal sources of income are citrus, phosphate, cattle, and tourist trade. Some of the largest land-pebble phosphate mines in the world are located in the county. These mines produce about three-fourths of all phosphate mined in the United States. Active and abandoned strip-mining pits have significantly changed some drainage systems.

Nearly 500 lakes, ranging in size from less than an acre to 54 square miles, lie within or adjacent to the county. These lakes have had a decided influence upon the development of the economy. The lakes are utilized for recreational, agricultural, and industrial purposes.

Flood-prone areas are largely located near lakes and streams and in low-lying swamps that include pasture and cypress woodlands. A few commercial developments and mobile home parks have been built near or in flood hazard areas.

In the following sections, soils, topography, and drainage systems are discussed by drainage basin.

Kissimmee River Basin. In the Kissimmee River basin, soils in the higher elevations, west and south of Lakes Marion and Pierce and west of Lake Weohyakapka, are mostly well drained to moderately well drained. Soils in the area of Lake Weohyakapka north to Lake Hatchineha are somewhat poorly drained in the low, flat ridges and poorly to very poorly drained in the low-lying, swampy areas.

The relatively low, flat prairie land is characterized by large, shallow lakes that drain from lake to lake by natural and manmade canals to the Kissimmee River. Lake Marion overflows via Lake Marion Creek to Lake Hatchineha. Saddlebag Lake overflows into a chain of small lakes to the northwest, which are tributaries to Big Gum Lake. Big Gum Lake overflows northwest to Lake Pierce. Lake Pierce overflows into Lake Hatchineha by Catfish Creek. Lake Hatchineha overflows to Lake Kissimmee and the Kissimmee River.

Lake Weohyakapka overflows to Lake Rosalie by Weohyakapka Creek. Lake Rosalie overflows southeast through swamp land into Tiger Lake and Lake Kissimmee--also eastward through a recently constructed drainage canal to Lake Kissimmee.

The major drainage system in southeast Polk County is formed by four interconnected lakes, Crooked Lake, Lake Clinch, Reedy Lake, and Lake Arbuckle. Crooked Lake was a closed basin until 1930 when it was connected to Lake Clinch by a drainage canal. Lake Clinch overflows to Reedy Lake through the ridge on which the City of Frostproof is located. Reedy Lake overflows via Reedy Creek to Lake Arbuckle. Lake Arbuckle overflows via Arbuckle Creek to Lake Istakpoga. Lake Istakpoga overflows by canal to the Kissimmee River.

Peace River Basin. In the high, rolling, sandy ridges of the Peace River basin, the soils are mostly well drained to moderately well drained. Some areas east of Lakeland and southeast of Bartow have somewhat poorly drained soils. Many of the lakes are interconnected by natural and improved drainage channels. Lakes in several areas are joined by canals forming complex drainage systems. Interconnected lake drainage systems in the basins include the Auburndale, Lake Alfred, and the Winter Haven chains. The Auburndale Lake chain is formed by Lakes Arietta, Whistler, Ariana, and Lena. Lakes Whistler, Ariana, and Lena are joined by small canals. SWFWMD control structure P-3 regulates the flow from Lake Arietta into Lake Whistler. Outflow from Lake Lena to Lake Lena drainage canal (Lake Lena Drain) is regulated by SWFWMD control structure P-1. Lake Lena Drain also receives flow from the Auburndale Lake chain that drains southward to Lake Hancock. The outflow from Lake Hancock to Saddle Creek is regulated by SWFWMD control structure P-11. Saddle Creek and Peace Creek Drainage Canal join just north of Bartow to form Peace River.

The Lake Alfred lake chain drains an area from Lake Alfred, north of Winter Haven and west of Haines City. During flood periods, Lake Alfred drains south to Lake Cummings through culverts under a paved road and the Seaboard Coastline Railroad to Lake Rochelle. Lakes George and Pansy drain to Lake Rochelle. Lake Echo drains to Lake Rochelle through a separate channel. Gum Lake and swampy areas northeast of Lake Alfred drain south during flood periods to Lake Haines. Lakes Haines, Rochelle, Conine, and Smart are interconnected by short channels and have a common outlet at the east side of Lake Smart. Lake Smart drains to Lake Fannie, but is regulated by SWFWMD control structure P-6. Lake Fannie drains to Lake Hamilton, but is regulated by SWFWMD control structure P-7. Lake Henry also drains to Lake Hamilton and is regulated by SWFWMD control structure P-5. Lake Hamilton drains to the Peace Creek Drainage canal and is regulated by SWFWMD control structure P-8.

Drainage from low-lying areas east of Winter Haven, including overflow from Lakes Florence and Mariam, enters the Peace Creek Drainage Canal. During floods, Lakes Dexter, Ned, and Daisy are interconnected by shallow ditches. Outflow from the system is through Lake Ned to the Peace Creek Drainage Canal.

The Winter Haven lake chain is composed of 14 interconnected lakes that drain areas between Auburndale and Lake Alfred and along the west and south sides of Winter Haven. Included in the chain are: Lakes Jessie, Idylwild, Hartridge, Cannon, Mirror, Spring, Howard, May, Shipp, Lulu, Roy, Eloise, Winterset, and Summit. Regulated outflow from Lake Mariana enters the Winter Haven lake chain that has a controlled outlet at the south side of Lake Lulu. Regulated outflow from Lake Lulu drains to the Peace Creek Drainage Canal via the Wahneta drainage canal. Lake elevations in the chain are affected by water-level conditions in the canal during flood periods. Lake Garfield, downstream from the chain, also drains to the Peace Creek Drainage Canal.

Peace River is the largest stream in Polk County and flows directly south from Bartow, through Fort Meade, and into Hardee County. Lake Buffum drains to Peace River south of Fort Meade via Boggy Branch.

Alafia and Hillsborough River basins. The Alafia River and Hillsborough River basins are located along the western side of Polk County. The land area is flat and has fairly high land-surface elevations. Soils are well to moderately well drained south and east of Mulberry and somewhat poorly drained north of Mulberry and west of Lakeland. Although the few streams in this area are small, most have well-defined channels. Poley Creek drains the southwest side of Lakeland and flows southwest to its confluence with North Prong Alafia River, west of Mulberry. Tributaries of Itchepackesassa Creek and Blackwater Creek drain the west side of Lakeland. Lester Lake and a swampy area northwest of Lakeland drain to Blackwater Creek.

Withlacoochee River Basin. The northwestern part of the county is in the Withlacoochee River basin. It is characterized by numerous small, low hammocks and shallow, saucer-like depressions. The sandy soils are somewhat poorly drained on the hammocks and poorly to very poorly drained in the waterlogged sloughs.

Except for the Withlacoochee River, which runs along the northern boundary of the county, natural drainage channels in this part of Polk County are virtually nonexistent. In recent years, however, extensive ditching has improved drainage. Mud Lake, Lake Agnes, Little Lake Agnes, and Lake Helene drain north toward the Withlacoochee River. Clearwater Lake, east of Little Lake Agnes, does not have a surface outlet. The swampy areas east of Polk City and north of Lake Alfred drain northward to the Withlacoochee River.

Saint Claire Lake, the correct name, (Reference 3) is shown on the corners of four U.S. Quadrangle Maps (Auburndale, Gum Lake, Polk City, and Winter Haven). The lake is named Grassy Lake on the southwest corner of the Gum Lake Quadrangle.

St. Johns River Basin. A long, narrow strip of the St. Johns River basin extends down into the northeast part of Polk County. The western drainage divide with the Withlacoochee River basin is a poorly defined north-south ridge. The sandy soils along the east ridge are well drained to moderately well drained; soils are poorly drained on the relict sand dunes. A large part of the lower elevations are swamps void of well-defined drainage channels. Lake Lowery, Bonnet Lake, Hammock Lake, and Tower Lake, north of Haines City, drain to the north (sheet flow) through the extensive swamp areas.

2.3 Principal Flood Problems

Low-lying areas near lakes and streams in Polk County are subject to flooding. Major flooding in the county has not occurred since 1960, but severe flooding potential exists for many areas. Most of the major historical floods in the area occurred during the months of September and October as a result of the heavy rains that accompanied hurricanes; however, locally heavy rainfall during May through December have produced severe flooding of small areas. The highest known flood in the Kissimmee River basin occurred in October 1949 and had a recurrence interval of about 20 years at the gaging station at the outlet of Lake Kissimmee. This flood was the result of hurricane "Hazel" that followed an exceptionally wet summer. Bridges and culverts were washed out, pastures and crops were inundated, and livestock was lost. The Weather Bureau reported that estimates of flood damage ran as high as $9 million. In the Peace River Basin, the 1960 flood was the highest since 1947 at Bartow and had a recurrence interval of about 25 years. The 1960 floods washed out portions of Interstate Highway 4 under construction east of Polk City.

2.4 Flood Protection Measures

SFWMD operates the outlet control structure at the south end of Lake Kissimmee to maintain recreational levels and regulate flood discharges to the lower Kissimmee River. The operating schedule for the outlet structure and the maintenance of the dredged channel downstream are being revised to minimize possible environmental changes by regulation.

SWFMD operates outlet control structures for several lakes in the Peace River basin. The structures are moderately effective in regulating small floods, but are not designed to regulate large floods. The Peace Creek Drainage Canal is the principal drainage system for many lakes in north-central Polk County and provides some protection from lowland flooding.

There are no other flood protection structures in Polk County. Improved drainage canals and ditches in the Hillsborough River and Withlacoochee River basins afford some flood protection to low-lying areas.

Other flood protection measures are being used to aid in the prevention of flood damage. These are in the form of land-use regulations that prohibit building in flood-prone areas identified in the Federal Emergency Management Agency Emergency Phase Flood Hazard Boundary Map.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equalled or exceeded once on the average during any 10-, 50-, 100-, and 500-year period (recurrence intervals), have been selected as having special significance for flood plain management and for flood insurance premium rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being equalled or exceeded during any year. Although the recurrence interval represents the long term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than one year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (one percent chance of annual occurrence) in any 50 year period is about 40 percent (four in 10), and for any 90 year period, the risk increases to about 60 percent (six in 10). The analyses reported here reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

The recurrence intervals of floods in the closed lakes in rural Polk County which were studied in detail (Lakes Helene, Deeson, and Clearwater Lake) are expressed in a slightly different manner. Flood elevations that are expected to be exceeded once on the average over a long period of time during any 10-, 50-, 100-, or 500-year period are still expressed as the 10-, 50-, 100-, or 500-year recurrence interval floods. But because of high serial correlation of annual peak elevations, the probability of a certain flood elevation being exceeded in any year is strongly influenced by the preceding year and cannot be expressed as the reciprocal of the recurrence interval.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish peak discharge-frequency relationships for floods of the selected recurrence intervals for each flooding source studied in detail in the unincorporated areas of Polk County.

Lakes and Mine Pits. Stage-frequency data for lakes having 10 or more years of stage record were determined from results of log-Pearson Type III analysis of the annual maximum stages or a combination of Log-Pearson Type III anlaysis and SCS hydrograph routing, or from results of flood-routing analyses that included outlet control regulation by the SWFWMD. Stage-frequency data for flooding sources without stage records were determined by the SCS hydrograph method. The method of analysis for each flooding source and the agency responsible for the results are listed below followed by an explanation of each method.

Method	Flooding Source	Period of Record	Agency
Log-Pearson Type III	Crooked Lake	1945 to date	Study Contractor
	Lake Clinch	1947 to date	Study Contractor
	Lake Hamilton	1945 to date	Study Contractor
	Lake Hancock	1950 to date	Study Contractor
	Lake Juliana	1962 to date	Study Contractor
	Lake Lowery	1960 to date	Study Contractor
	Lake Marion	1958 to date	Study Contractor
	Lake Parker	1949 to date	Study Contractor
	Lake Pierce	1947 to date	Study Contractor
	Lake Rosalie	1942-43, 1958 to date	Study Contractor
	Lake Weohyakapka	1958 to date	Study Contractor
	Reedy Lake	1945 to date	Study Contractor
Log Pearson Type III and modified SCS hydrograph flood routing	Lake Alfred	1961 to date	Study Contractor
	Lake Deeson	1954-60, 1965 to date	Study Contractor
	Lake Helene	1961 to date	Study Contractor
Flood Routing (Model)	Lake Ariana		SWFWMD
	Lake Arietta		SWFWMD
	Lake Eloise		SWFWMD
	Lake Gibson		SWFWMD
	Lake Haines		SWFWMD
	Lake Henry		SWFWMD
	Lake Lena		SWFWMD
	Lake Lulu		SWFWMD
	Lake Mariana		SWFWMD
	Lake Rochelle		SWFWMD
	Lake Winterset		SWFWMD
	Lake Whistler		SWFWMD
SCS Hydrograph	Lake Agnes		Study Contractor
	Little Lake Agnes		Study Contractor
	Big Gum Lake		Study Contractor
	Lake Buffum		Study Contractor
	Clearwater Lake		Study Contractor
	Lake Cummings		Study Contractor
	Lake Daisy		Study Contractor
	Lake Dexter		Study Contractor
	Lake Echo		Study Contractor
	Lake Florence		Study Contractor
	Lake George		Study Contractor
	Gum Lake		Study Contractor
	Lester Lake		Study Contractor
	Lake Mariam		Study Contractor

Method	Flooding Source	Period of Record	Agency
	continued		
	Mine pits southeast of Lakeland		
	Pit 1		Study Contractor
	Pit 2		Study Contractor
	Pit 3		Study Contractor
	Mud Lake		Study Contractor
	Ned Lake		Study Contractor
	Saddlebag Lake		Study Contractor
	Saint Claire Lake		Study Contractor
	Skyview Lake		Study Contractor

Flood elevations for Little Lake Hamilton, Middle Lake Hamilton, and Lake Hamilton are the same. Flood elevations for Bay Lake, Tangerine Lake, Lake Van, Lake Mattie, and Lake Juliana are the same. Flood elevations for Bonnet Lake, Lake Hammock, Tower Lake and Lake Lowery are the same. Flood elevations for Lake Roy are the same as for the Lake Howard chain of lakes in the Winter Haven FIS (Reference 4). Flood elevations for Lake Garfield are controlled at the outlet by hydraulic conditions in the Peace Creek Drainage Canal.

The flood routing model used by SWFWMD is described in the report entitled, Flood-Stage Frequency Relations For Selected Lakes In Polk County (Reference 5). Rainfall frequency data used in the study are based on data from the following sources: Four Rivers Basin, Florida, General Design Memorandum of U.S. Army Corps of Engineers for storm durations greater than 24 hours (Reference 6), and the Rainfall Frequency Atlas of the U.S. Department of Commerce, Weather Bureau for durations of 24 hours and less (Reference 7). The Puls method was used with stage-volume curves based on 5-foot contour, 1:24,000 scale topographic maps and discharge ratings for the outlet structures to route floods of known recurrence interval through lakes indicated.

Stage-frequency data determined by the study contractor for the ungaged lakes and mine pits studied in detail were also determined by routing flood hydrographs of known recurrence intervals through the individual or interconnected lakes using a routing procedure described in Section 3.2, entitled, "Hydraulic Analyses."

Flood hydrographs for the routing analysis were computed using the SCS procedure described in National Engineering Handbook, Section 4, Hydrology (Reference 8). The SCS procedure consists of selecting a storm of known duration and intensity and computing direct runoff using curve numbers to estimate runoff for various soil-cover complexes. Flood hydrographs are then determined by using an appropriate SCS unit hydrograph to distribute direct runoff.

Design storms were selected from U.S. Weather Bureau Technical Paper No. 40 (Reference 7). In this publication, rainfall intensities are given for recurrence intervals of 1 to 100 years and durations of 30 minutes to 24 hours. Rainfall intensities for durations of 2 to 10 days were selected from U.S. Weather Bureau Technical Paper 49 (Reference 9). Rainfall intensities for the 500-year recurrence interval were estimated by extending a plot of lower frequency values on normal-probability graph paper.

Runoff curve numbers were selected for each combination of soil type and land use. Where drainage basins were composed of more than one soil-cover combination, a composite runoff curve number was determined by weighting each curve number proportional to its area. Land use was determined from 1:6,000 aerial photographs taken on September 29, 1977 (Reference 10).

Soil types were determined from the Interim Soil Survey Report, Polk County, Florida (Reference 11).

The SCS procedure assumes that time-to-peak is a function of time of concentration. Time of concentration is the travel time from the most distant part of the basin to the outlet. A graph of average basin slope versus ground cover type was used to determine average overland velocity. Time of concentration was then determined by dividing overland flow distance by average velocity.

Appropriate SCS unit hydrographs were selected on the basis of the ratio of duration of rainfall excess to time to peak. The duration of rainfall excess is a function of storm duration, rainfall intensity, and runoff curve number. Unit hydrographs based on storm durations of 6, 12, 24, and 240 hours were used in the computation of flood hydrographs.

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for floods of selected recurrence intervals on streams and lake drains studied in detail. Relationships used in this study were determined by one of several methods, including: (1) regional flood-frequency methods, (2) SCS hydrograph method, (3) flow routing through lakes (lake routing), (4) lake outlet routing, and (5) weighting for phosphate pit storage. The method used in determining flood discharges for each flooding source studied in detail are as follows:

Flood-Discharge Method	Flooding Source
Regional flood frequency	Lake Rosalie tributaries
Regional flood frequency	North Prong Alafia River
Regional flood frequency	Peace River Drainage Canal
Regional flood frequency and SCS hydrograph	Poley Creek
SCS hydrograph	Blackwater Creek tributary
SCS hydrograph	Itchepackesassa Creek

Flood-Discharge Method	Flooding Source (cont.)
Routing flow through lake	Lake Gibson Drain
Routing flow through lake	Lester Lake Drain
Routing flow through lake	Mud Lake Drain
Lake flood elevation and lake outlet rating	Lake Lena Drain
	Lake Parker Drain
*	Peace River
**	Saddle Creek

*From report "Flood profiles for Peace River, south-central Florida" (Reference 12).

**From correlation with Peace River at Bartow (Reference 12) downstream from Lake Hancock, and weighted for storage upstream.

Regional flood-frequency relations for floods of the selected recurrence intervals for west-central Florida are described in "Regional flood-frequency relations for west-central Florida" (Reference 13). Flood-peak discharges determined using these relations are used to compute peak discharges for North Prong Alafia River, Peace River above Bartow, Peace Creek Drainage Canal, and Poley Creek (greater than 10 square miles drainage area).

For areas of shallow flooding along the Peace Creek Drainage Canal tributaries, studied by approximate methods, the 100-year flood discharge was computed using methods described in the report entitled, "Regional flood-frequency relations for west-central Florida" (Reference 13).

The SCS hydrograph method was used to determine the 100-year flood discharge for the small stream in the area east of Haines City. Approximate flood areas for Lake Hatchineha and Tiger Lake were based on the Lake Hatchineha and Hesperides Quadrangle Flood Prone Area Maps (Reference 14).

A summary of drainage area - peak discharge relationships for each stream in detail is shown on Table 1, "Summary of Discharges".

Peak discharges on Saddle Creek are attenuated in the downstream direction due to upstream structures.

TABLE 1 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs)			
		10-YEAR	50-YEAR	100-YEAR	500-YEAR
BLACKWATER CREEK TRIBUTARY					
At Lewellyn Road	0.79	92	186	340	498
At Section C	0.54	69	140	255	374
At Section E	0.45	62	125	228	334
At Section H	0.30	46	93	170	249
HAINES CITY DRAINAGE CANAL					
South city limits	5.12	62	90	109	138
Downstream of junction of Lake Eva Outlet Ditch	4.63	58	84	102	128
Upstream of junction of Lake Eva Outlet Ditch	3.13	44	64	78	97
Downstream of U.S. 27	1.96	32	46	56	70
ITCHEPACKESSA CREEK					
At Sutton Road	4.25	490	900	1,100	1,730
At Section I	2.97	410	820	1,000	1,600
At Section N	1.44	310	720	880	1,450
LAKE HUNTER DRAIN					
At mouth	1.02	14	24	28	33
LAKE GIBSON DRAIN					
At mouth	4.31	60	125	143	186
LAKE JOHN DRAIN					
At mouth	6.0	59	113	145	205
LAKE LENA DRAIN					
At mouth	20.6	150	166	172	181
At State Road 540	16.4	118	132	137	144
At State Road 542	14.0	103	107	117	123
At State Road 655	12.5	90	99	104	110
LESTER LAKE DRAIN					
At State Road 35A	5.64	125	195	240	360
LAKE PARKER DRAIN					
At Seaboard Coast Line Railroad	23.6	145	195	213	257

TABLE 1 - SUMMARY OF DISCHARGES-continued

LAKE ROSALIE TRIBUTARY					
Below confluence with North Fork	6.5	292	658	713	1,180
Above confluence with North Fork	2.5	227	513	524	835
MUD LAKE DRAIN					
Section A	1.89	44	69	84	111
NORTH FORK LAKE					
Rosalie Tributary	4.0	65	145	189	346
NORTH PRONG ALAFIA RIVER					
At County line	64.4	4,140	7,320	8,980	13,500
Above Pole Creek	39.0	2,170	4,000	4,950	8,050
PEACE RIVER DRAINAGE CANAL					
At Peace River mouth	227	2,090	3,820	4,690	7,950
At Gaging Station	160	1,460	2,750	3,450	5,520
PEACE RIVER					
At Hardee County line	730	9,500	15,800	19,200	28,800
Section M	583	6,750	10,800	13,200	19,700
Section R	542	5,930	9,550	11,500	17,000
Section Z	465	4,280	7,000	8,450	12,300
Section AV	434	3,600	6,050	7,250	10,600
Section BT	390	2,740	4,720	5,680	8,240
POLEY CREEK					
At mouth	25.4	1,080	1,970	2,410	3,940
At State Road 60	24.0	920	1,710	2,100	3,460
At Shepard Road	20.5	830	1,530	1,880	3,080
Below Lake Drain	17.3	670	1,240	1,520	2,500
Above Lake Drain	6.5	420	840	1,050	1,710
Above Pipkin Road Extension	3.6	300	590	750	1,180
SADDLE CREEK					
At Peace River	390	2,740	4,720	5,800	8,240
Confluence of Saddle Creek & Peace Creek Drainage Canal	145	800	1,270	1,500	2,060

TABLE 1 - SUMMARY OF DISCHARGES (cont.)

Structure	135	614	1,190	1,400	1,930
State Road 540	70	1,210	2,350	2,910	5,020
U.S. Highway 92	56	1,020	2,000	2,490	4,290
State Road 546	21.5	390	800	1,000	1,750
Southwest Ditch	0.47	159	250	289	457
Southwest Ditch Tributary	0.18	124	200	231	340

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of the flooding sources studied in detail in Polk County were carried out to provide estimates of elevations of floods of the selected recurrence intervals along each of the flooding sources.

Lakes. A modified Puls routing technique was used to route flood hydrographs of the selected recurrence intervals through the ungaged lakes and depressions. The procedure is based on the continuity relation in which change in storage is equal to the difference between average inflow and outflow. A stage-volume relation, lake elevation at the beginning of storm, and an outflow rating were required for each lake. Stage-volume relations were determined by planimetering on areas between contours outlined in topographic maps (scale of 1:24,000, 5-foot interval) (Reference 15) or on aerial photography (scale 1:2,400, 1-foot contour interval) (Reference 16).

Beginning elevations used in the routing analyses were estimated as the long-term average elevation. In an analyses of 32 long-term lake gages in Polk County and adjoining counties, it was found that the standard error of the average lake elevation was within 1.1 feet of the elevation printed on the USGS topographic quadrangle. Therefore, the lake-surface elevations from the topographic quadrangle were used as the beginning elevations for flood-routing analysis for both gaged and ungaged lakes.

Outflow ratings were based on field survey data of weir, culvert, and channel elevations obtained in 1979. Culvert ratings were computed using USGS computer program A526 (Reference 17). Weir control discharges were computed using weir coefficients determined using USGS procedures (Reference 18). Open channel discharge ratings were computed using USGS step-backwater computer program E431 (Reference 19).

Results of the Log-Pearson Type III analysis of annual maximum stages and the SCS hydrograph routing analyses were used to determine stage frequency relations used for lakes that had short periods of record. Log-Pearson Type III analysis results were used to define lake-stage frequencies through 50-years. The 100- and 500-year flood stages were determined from results of the SCS hydrograph routing analysis using runoff curve numbers that matched routed peak stages with the 10- and 50-year stages from the Log-Pearson Type III analysis.

The highest elevation computed by the routing procedure for each recurrence interval using the different storm durations was selected as the flood elevation for that recurrence interval. In routing flow from Saddlebag Lake through Big Gum Lake, it was necessary to route flow from, or through, other lakes including Thomas, Cypress, Parks, and Little Gum Lakes. These lakes were not among those to be studied in detail, but the computed 100-year elevations were used to delineate the approximate flood limits for these lakes. A summary of lake flood elevations is shown in Table 2, "Summary of Elevations".

TABLE 2 - SUMMARY OF ELEVATIONS

FLOODING SOURCE AND LOCATION	ELEVATION ABOVE NGVD			
	10-YEAR	50-YEAR	100-YEAR	500-YEAR
Bay Lake	133.3	133.7	133.8	134.2
Big Gum Lake	95.1	95.3	95.4	95.7
Bonnet Lake	131.4	133.2	133.9	135.3
Clearwater Lake	146.2	147.8	148.5	150.1
Crooked Lake	122.6	124.9	125.8	127.8
Engineers Lake	126.7	126.8	126.9	127.1
Gum Lake	132.6	132.9	133.0	133.2
Hammock Lake	131.4	133.2	133.9	135.3
Lake Agnes	135.2	136.0	136.4	136.9
Lake Alfred	129.4	132.8	134.2	134.4
Lake Ariana	137.1	137.9	138.3	139.0
Lake Arietta	143.4	144.4	144.8	145.5
Lake Bentley	116.2	117.9	119.7	121.4
Lake Bonny	130.9	131.9	132.4	133.3
Lake Buckeye	131.1	131.4	131.6	131.7
Lake Buffum	132.6	133.2	133.4	133.7
Lake Cannon	132.6	133.1	133.4	134.1
Lake City Beach	138.6	139.0	139.1	139.5
Lake Clinch	108.0	109.7	110.4	111.9
Lake Conine	129.7	130.2	130.5	131.3
Lake Cummings	129.2	131.2	133.5	133.6
Lake Daisy	130.1	130.9	131.3	132.1
Lake Deer	141.3	141.8	142.2	142.3
Lake Deeson	129.5	132.2	133.1	134.5
Lake Dexter	131.1	132.1	132.5	133.0
Lake Echo	132.3	133.4	134.0	135.2
Lake Eloise	132.6	133.1	133.4	134.1
Lake Fannie	126.5	128.0	128.1	128.3
Lake Florence	128.8	129.1	129.2	129.6
Lake Garfield	104.8	106.0	106.6	108.4
Lake George	129.8	130.2	130.6	131.3

TABLE 2 - SUMMARY OF ELEVATIONS (cont.)

Lake Gibson	144.2	145.2	145.4	146.0
Lake Haines	129.8	130.2	130.6	131.3
Lake Hamilton	121.6	122.9	123.4	124.4
Lake Hancock	100.3	101.6	102.1	103.4
Lake Hartridge	132.6	133.1	133.4	134.1
Lake Helene	144.8	146.7	147.2	147.4
Lake Henry	127.0	127.3	127.5	127.8
Lake Ida	80.0	80.8	81.1	81.8
Lake Idylwild	132.6	133.1	133.4	134.1
Lake Jessie	132.6	133.1	133.4	134.1
Lake John	111.2	112.2	112.6	113.5
Lake Juliana	133.0	134.3	134.7	135.6
Lake Lena	137.1	137.9	138.3	139.0
Lake Lowery	131.4	133.2	133.9	135.3
Lake Lucerne	132.3	133.4	134.0	135.1
Lake Lulu	132.6	133.1	133.4	134.1
Lake Mariam	125.6	126.2	126.3	126.6
Lake Mariana	137.7	138.3	138.6	139.3
Lake Marion	67.3	67.6	67.7	67.9
Lake Mattie	133.0	134.3	134.7	135.6
Lake Otis	128.7	129.6	129.9	130.5
Lake Pansy	129.8	130.2	130.6	131.3
Lake Parker	131.6	132.2	132.4	132.9
Lake Parker Tributary Swamp	138.8	139.5	140.0	141.1
Lake Pierce	78.2	78.8	79.0	79.5
Lake Rochelle	129.8	130.2	130.6	131.3
Lake Rosalie	55.5	56.0	56.2	56.6
Lake Roy	132.6	133.1	133.4	134.1
Lake Shipp	132.6	133.1	133.4	134.1
Lake Smart	129.7	130.2	130.5	131.3
Lake Summit	132.6	133.1	133.4	134.1
Lake Trask	114.9	117.1	118.2	121.1
Lake Van	133.0	134.3	134.7	135.6
Lake Weohyakapka	63.1	63.5	63.7	64.0
Lake Whistler	140.9	141.4	141.5	141.9
Lake Winterset	132.6	133.1	133.4	135.1
Lester Lake	129.1	129.8	130.1	130.9
Little Lake Agnes	135.2	136.0	136.4	136.9
Little Lake Hamilton	121.6	122.9	123.4	124.4
Mine Pits, Southeast Lakeland				
Pit 1	134.6	134.7	134.7	134.8
Pit 2	135.9	136.1	136.4	136.9
Pit 3	126.2	126.3	126.4	126.4
Mud Lake	139.6	140.3	140.6	141.1
Ned Lake	130.6	130.9	130.9	131.1
Reedy Lake	80.0	80.8	81.1	81.8

TABLE 2 SUMMARY OF ELEVATIONS (cont.)

Saddlebag Lake	106.8	107.8	108.2	108.4
Saint Claire Lake	133.0	134.3	134.7	135.6
Skyview Lake	136.6	137.1	137.2	137.3
Southeast Lakes	112.8	113.1	113.3	113.6
Tangerine Lake	133.0	134.3	134.7	135.6
Tower Lake	131.4	133.2	133.9	135.3
Unnamed Lake south of Dundee	136.6	140.7	142.4	145.2

Stream Reaches. Stream and valley cross sections and roughness values for the backwater analyses of Peace River, from the Polk-Hardee County line to State Road 60, were the same as used in the report entitled "Flood profiles for Peace River, south-central Florida" (Reference 12). Cross sections and roughness values above State Road 60, to the confluence of Peace Creek Drainage Canal and Saddle Creek and Saddle Creek upstream to U.S. Highway 92 east of Lakeland, were obtained from the Jacksonville, Florida, District, U.S. Army Corps of Engineers. From U.S. Highway 92 to State Road 546, Saddle Creek channel cross sections and bridge dimensions were provided under contract by Kucera and Associates, Inc. Land-surface elevations for each flood plain cross section were determined from SWFWMD topographic maps having 1-foot contour intervals (Reference 16).

Other cross section data and bridge and culvert dimensions were provided under contract by Kucera and Associates, Inc. Flood plain elevations were taken from available contour maps. Where available, 1-foot contour maps were used.

Roughness values used were based on field inspection and aerial photography and ranged from 0.03 to 0.16 in the main channel and 0.10 to 0.30 in thick wetland forests.

Locations of cross sections used in the hydraulic analyses are shown on the flood profiles. Locations of cross sections used for floodway computations (Section 4.2) are also shown on the Flood Boundary and Floodway Map.

Water-surface elevations of floods of the selected recurrence intervals were computed in a step-backwater analyses using U.S. Geological Survey computer program E431. Beginning elevations for the Peace River Drainage Canal tributaries at their confluences with Peace River Drainage Canal were determined from the flood profiles of Peace River Drainage Canal. Beginning water-surface elevations for the backwater computations were generally assumed to be equal to normal depth. Flood profiles were drawn showing water-surface elevations for the 10-, 50-, 100-, and 500-year recurrence-interval floods. Beginning elevations for Saddle Creek and Peace River Drainage Canal were taken from the Peace River profiles

(Reference 12) at the confluence. Beginning elevations for Lake Lena Drain were taken from stage-frequency data for Lake Hancock. Beginning elevations for the small stream east of Haines City were determined by the slope-area method for the most downstream section.

Beginning water-surface elevations for North Prong Alafia River were taken from flood profiles at the Hillsborough-Polk County line as computed by Tetra Tech Inc. in their flood insurance study of Hillsborough County (Reference 20). Beginning elevations for Poley Creek were taken from the North Prong Alafia River flood profiles at the confluence. Beginning elevations for Lake Gibson Drain were taken from the Lake Parker flood stages.

Beginning water surface elevations for Itchepackesassa Creek, Blackwater Creek Tributary, Lester Lake Drain, and Mud Lake Drain were calculated using the slope-area method (Reference 19). All elevations are referenced to the NGVD, formerly referred to as Sea Level Datum of 1929.

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

4.0 FLOOD PLAIN MANAGEMENT APPLICATIONS

The National Flood Insurance Program encourages state and local governments to adopt sound flood plain management programs. Therefore, each Flood Insurance Study includes a flood boundary map designed to assist communities in developing sound flood plain management measures.

4.1 Flood Boundaries

In order to provide a national standard without regional discrimination, the 100-year flood has been adopted by FEMA as the base flood for purposes of flood plain management measures. The 500-year flood is employed to indicate additional areas of flood risk in the community. For each flooding source stream studied in detail, the boundaries of the 100- and the 500-year floods have been delineated using the flood elevations computed for each lake and depression or using the flood elevations determined at each stream cross section; between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:24,000 with 5- or 10-foot contours (References 15, 21, and 22). In cases where the 100- and 500-year flood boundaries are close together, only the 100-year boundary has been shown.

For the shallow flooding areas studied by approximate methods, the boundary of the 100-year flood was developed from normal depth calculations and the topographic maps referenced above.

The boundaries of the 100- and 500-year floods are shown on the Flood Boundary and Floodway Map. Small areas within the flood boundaries may lie above the flood elevation, and therefore, are not subject to flooding. Owing to limitations of the map scale and/or lack of detailed topographic data, such areas are not shown.

4.2 Floodways

Encroachment on flood plains, such as artificial fill, reduces the flood-carrying capacity, increases the flood heights of streams, and increases flood hazards in areas beyond the encroachment itself. One aspect of flood plain management involves balancing the economic gain from flood plain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, the concept of a floodway is used as a tool to assist local communities in this aspect of flood plain management. Under this concept, the area of the 100-year flood is divided into a floodway and a floodway fringe. The floodway is the channel of a stream plus any adjacent flood plain areas that must be kept free of encroachment in order that the 100-year flood may be carried without substantial increases in flood heights. Minimum standards of FEMA limit such increases in flood heights to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this report are presented to local agencies as minimum standards that can be adopted or that can be used as a basis for additional studies.

The floodways presented in this study were computed on the basis of equal conveyance reduction, where possible, from each side of the flood plain. The results of these computations were tabulated at selected cross sections for each stream segment for which a floodway was computed (Table 3).

As shown on the Flood Boundary and Floodway Map, the floodway widths were determined at cross sections; between cross sections, the boundaries were interpolated. In cases where the boundaries of the floodway and the 100-year flood are either close together or collinear, only the floodway boundary has been shown. Two portions of the Peace River floodway are in the Fort Meade and Bartow corporate limits and outside of Polk County jurisdiction.

The area between the floodway and the boundary of the 100-year flood is termed the floodway fringe. The floodway fringe thus encompasses the portion of the flood plain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to flood plain development are shown in Figure 3.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Mud Lake Drain								
A	0	75	244	0.34	129.2	129.2	130.2	1.0
B	1,000	75	256	0.33	129.2	129.2	130.2	1.0
C	2,900	25	39	2.15	130.1	130.1	130.6	0.5
D	2,950	32	78	1.08	131.0	131.0	132.0	1.0
E	3,100	50	112	0.75	131.1	131.1	132.0	0.9
F	4,450	59	108	0.78	132.0	132.0	132.4	0.4
G	4,490	149	510	0.16	133.3	133.3	134.3	1.0
H	5,365	125	307	0.27	133.4	133.4	134.3	0.9
I	6,150	40	49	1.72	134.2	134.2	135.0	0.8
J	6,720	68	105	0.80	136.8	136.8	137.2	0.4
North Prong Alafia River								
A	33,920	720[2]	6,607	1.36	65.6	65.6	66.6	1.0
B	37,190	600	3,970	1.26	68.8	68.8	69.7	0.9

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[1] Feet above mouth for North Prong Alafia River; feet above downstream limit of detailed study for Mud Lake Drain.

[2] Floodway lies outside county limits.

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

FLOODWAY DATA

MUD LAKE DRAIN-NORTH PRONG ALAFIA RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
North Prong Alafia River (continued)								
C	40,610	600	3,936	1.26	72.9	72.9	73.8	0.9
D	44,365	520	3,776	1.31	76.3	76.3	77.3	1.0
E	47,320	500	3,344	1.48	79.9	79.9	80.8	0.9
F	51,210	306	1,955	2.53	89.2	89.2	89.8	0.6
G	52,685	1,100	8,419	0.59	89.9	89.9	90.4	0.5
H	56,010	587	2,096	2.36	91.6	91.6	91.9	0.3
I	59,610	530	3,599	1.38	98.4	98.4	98.6	0.2
J	61,600	550	3,567	1.06	99.2	99.2	99.8	0.6
K	61,840	440	3,772	1.01	99.5	99.5	100.2	0.7
L	62,750	900[2]	6,482	0.58	99.6	99.6	100.3	0.7
M	64,400	586	4,908	0.77	99.7	99.7	100.5	0.8
N	64,850	570	2,976	1.27	99.9	99.9	100.7	0.8
O	65,700	600	2,914	1.29	100.8	100.8	101.8	1.0
P	67,200	530	3,701	1.02	102.0	102.0	103.0	1.0
Peace River								
A	423,100	1,920	22,234	0.86	72.0	72.0	73.0	1.0
B	424,500	1,800	20,744	0.93	72.2	72.2	73.2	1.0
C	428,000	2,000	22,735	0.84	72.7	72.7	73.7	1.0
D	431,600	2,000	23,016	0.83	73.3	73.3	74.3	1.0

[1] Feet above mouth.

[2] Floodway width extends beyond county limits.

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

FLOODWAY DATA

NORTH PRONG ALAFIA RIVER - PEACE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Saddle Creek								
A	200	1,428	8,821	0.17	99.8	99.8	100.8	1.0
B	1,000	202	1,579	0.95	99.8	99.8	100.8	1.0
C	4,200	247	1,287	1.17	100.0	100.0	100.9	0.9
D	6,200	356	1,293	1.16	100.3	100.3	101.3	1.0
E	8,200	71	531	2.83	100.8	100.8	101.8	1.0
F	10,100	79	577	2.43	101.5	101.5	102.4	0.9
G	12,100	515	2,679	0.52	101.8	101.8	102.8	1.0
H	12,200	628	3,188	0.44	101.8	101.8	102.8	1.0
I	15,150	390	2,794	0.50	102.3	102.3	103.3	1.0
J	37,100	4,863	44,812	0.06	105.2	105.2	106.2	1.0
K	39,000	1,808	13,572	0.21	105.2	105.2	106.2	1.0
L	41,750	2,151	13,198	0.22	105.4	105.4	106.4	1.0
M	45,000	2,350	12,845	0.23	105.8	105.8	106.7	0.9
N	47,400	2,467	14,161	0.21	106.1	106.1	107.0	0.9
O	52,800	1,951	8,718	0.33	107.5	107.5	108.3	0.8
P	56,300	1,722	5,042	0.58	108.7	108.7	109.4	0.7
Q	56,700	885	3,300	0.88	109.1	109.1	109.8	0.7
R	57,800	882	1,857	1.34	109.3	109.3	109.9	0.6
S	58,100	943	4,280	0.51	109.6	109.6	110.2	0.6
T	61,150	972	4,397	0.47	110.7	110.7	111.0	0.3
U	63,850	1,523	5,546	0.30	111.1	111.1	111.4	0.3
V	68,660	65	324	3.29	112.8	112.8	113.4	0.6

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[1] Feet above mouth.

TABLE 3

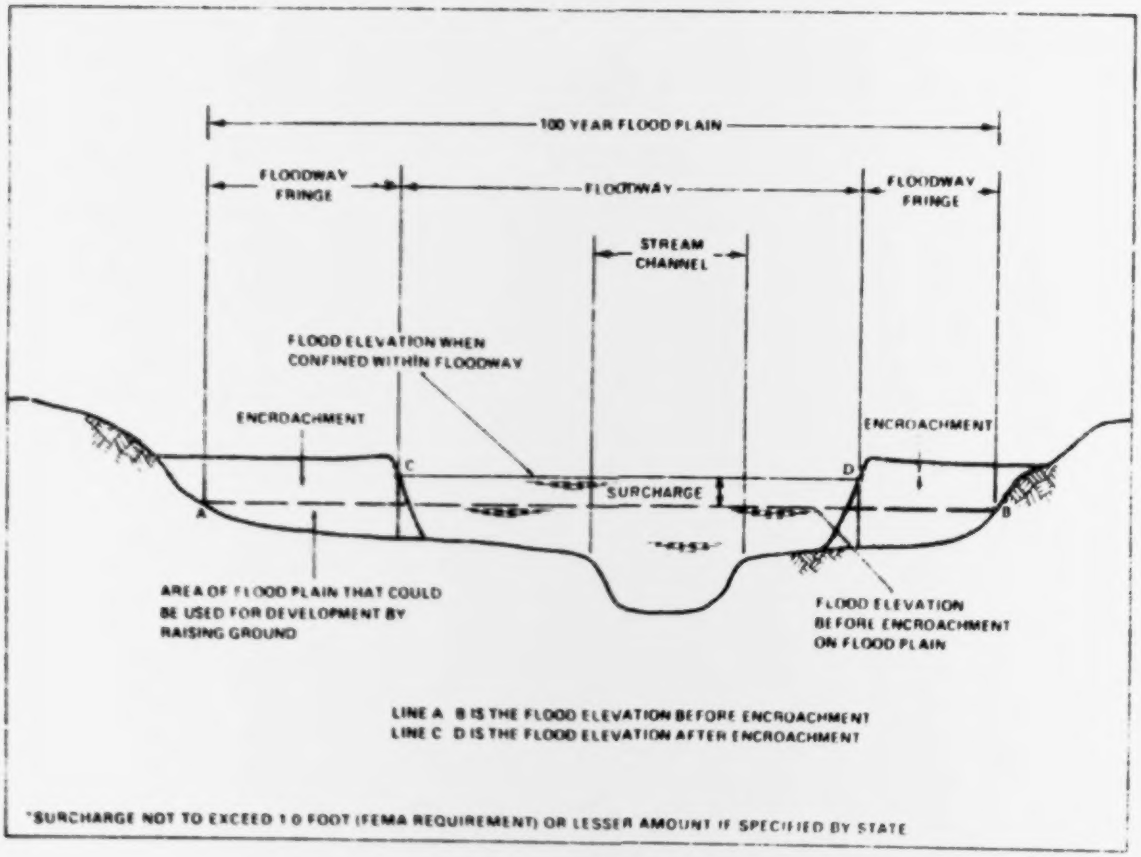
FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

FLOODWAY DATA

SADDLE CREEK


100 YEAR FLOOD PLAIN
FLOODWAY FRINGE
FLOODWAY
FLOODWAY FRINGE
STREAM CHANNEL
FLOOD ELEVATION WHEN CONFINED WITHIN FLOODWAY
ENCROACHMENT
ENCROACHMENT
C
D
SURCHARGE
A
B
AREA OF FLOOD PLAIN THAT COULD BE USED FOR DEVELOPMENT BY RAISING GROUND
FLOOD ELEVATION BEFORE ENCROACHMENT ON FLOOD PLAIN
LINE A B IS THE FLOOD ELEVATION BEFORE ENCROACHMENT
LINE C D IS THE FLOOD ELEVATION AFTER ENCROACHMENT
*SURCHARGE NOT TO EXCEED 1.0 FOOT (FEMA REQUIREMENT) OR LESSER AMOUNT IF SPECIFIED BY STATE

FLOODWAY SCHEMATIC Figure 3

5.0 INSURANCE APPLICATION

In order to establish actuarial insurance rates, FEMA has developed a process to transform the data from the engineering study into flood insurance criteria. This process includes the determination of reaches, Flood Hazard Factors (FHFs), and flood insurance zone designations for each significant flooding source studied in detail affecting the unincorporated areas of Polk County.

5.1 Reach Determinations

Reaches are defined as lengths of watercourses having relatively the same flood hazard, based on the average weighted difference in water-surface elevations between the 10- and 100-year floods. This difference does not have a variation greater than that indicated in the following table for more than 20 percent of the reach.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Peace River Drainage Canal (cont.)								
N	35,950	302	2,326	1.48	111.4	111.4	112.1	0.7
O	38,650	244	2.057	1.68	112.4	112.4	113.3	0.9
P	38,775	351	2,651	1.30	112.5	112.5	113.3	0.8
Q	40,375	591	3,694	0.93	113.0	113.0	113.8	0.8
R	43,575	3,949	36,575	0.09	113.1	113.1	113.9	0.8
Poley Creek								
A	1,600	391	1,830	1.32	67.5	63.4[2]	64.4[2]	1.0
B	2,800	374	1,904	1.27	67.5	64.8[2]	65.8[2]	1.0
C	4,800	335	2,056	1.17	67.5	66.5[2]	67.5[2]	1.0
D	5,850	367	2,036	1.18	67.5	67.3[2]	68.3[2]	1.0
E	8,675	272	614	3.93	72.8	72.8	73.5	0.7
F	9,176	184	920	2.26	74.9	74.9	75.7	0.8
G	12,050	297	1,740	1.21	76.2	76.2	77.1	0.9
H	14,440	355	1,078	1.95	79.2	79.2	80.2	1.0
I	15,050	507	2,001	0.94	80.0	80.0	81.0	1.0
J	15,100	180	617	3.05	81.1	81.1	82.1	1.0
K	16,300	280	1,885	1.00	83.4	83.4	84.3	0.9
L	16,700	323	2,302	0.82	83.5	83.5	84.4	0.9
M	17,600	448	2,932	0.64	83.6	83.6	84.6	0.9
N	19,000	150	730	2.08	84.7	84.7	85.7	1.0

[1] Feet above mouth.

[2] Elevations computed without consideration of backwater effects.

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

FLOODWAY DATA

PEACE RIVER DRAINAGE CANAL-POLEY CREEK

TABLE 3

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Poley Creek								
O	19,900	230	1,097	0.96	86.4	86.4	87.3	0.9
P	21,150	152	780	1.35	87.6	87.6	88.6	1.0
Q	22,250	70	334	3.14	91.6	91.6	92.6	1.0
R	22,330	70	436	2.41	91.9	91.9	92.9	1.0
S	22,950	100	592	1.77	93.2	93.2	93.6	0.4
T	24,200	148	853	1.23	95.0	95.0	95.5	0.5
U	25,150	169	862	1.22	95.8	95.8	96.5	0.7
V	26,600	212	1,125	0.93	96.9	96.9	97.7	0.8
W	27,050	127	542	1.94	97.5	97.5	98.3	0.8
X	27,150	428	2,655	0.40	99.7	99.7	100.7	1.0
Y	27,850	390	2,625	0.40	99.8	99.8	100.8	1.0
Z	28,350	851	1,783	0.59	99.9	99.9	100.9	1.0
AA	29,100	141	621	1.69	100.9	100.9	101.9	1.0
AB	30,600	100	447	1.68	102.9	102.9	103.8	0.9
AC	31,050	174	344	2.18	103.0	103.0	104.0	1.0
AD	31,700	98	416	1.80	106.3	106.3	107.2	0.9
AE	32,600	145	533	1.41	108.0	108.0	109.0	1.0

[1] Feet above mouth.

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

FLOODWAY DATA

POLEY CREEK

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION[3] (FEET NGVD)
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
Big Gum Lake	600	-0.3	-0.1	+0.2	005	A1	95
Bonnet Lake	225	-2.5	-0.7	+1.4	025	A5	134
Clearwater Lake	190	-2.3	-0.7	+1.6	025	A5	148
Crooked Lake	725,750, 950	-3.2	-0.9	+2.0	030	A6	126
Depression East of Town of Lake Hamilton	400	*	*	*	055	A11	139
Engineers Lake	375	-0.2	-0.1	+0.2	005	A1	127
Gum Lake	225,375	-0.4	-0.1	+0.2	005	A1	133
Hammock Lake	225,375	-2.5	-0.7	+1.4	025	A5	134
Lake Agnes	190,200	-1.2	-0.4	+0.5	010	A2	136
Lake Alfred	350,375	-4.8	-1.4	+0.5	050	A10	134
Lake Ariana	350	-1.2	-0.4	+0.7	010	A2	138
Lake Arietta	350	-1.4	-0.4	+0.7	015	A3	145

[1] Flood Insurance Rate Map Panel [2] Weighted Average [3] Rounded to Nearest Foot

*Information Not Available; Refer to Town of Lake Hamilton Flood Insurance Study dated November 5, 1982.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

BIG GUM LAKE-BONNET LAKE-CLEARWATER LAKE-CROOKED LAKE-DEPRESSION EAST OF TOWN LAKE HAMILTON-ENGINEERS LAKE-GUM LAKE-HAMMOCK LAKE-LAKE AGNES-LAKE ALFRED-LAKE ARIANA-LAKE ARIETTA

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1% (100-YEAR) FLOOD AND 10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)	FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION[3] (FEET NGVD)
Lake Bentley	320	-3.5	-1.8	+1.7	035	A7	120
Lake Bonny	320	-1.5	-0.5	+0.5	015	A3	132
Lake Buckeye	375	-0.5	-0.2	+0.1	005	A1	132
Lake Buffum	725	-0.8	-0.2	+0.3	010	A2	133
Lake Cannon	345	-0.8	-0.3	+0.7	010	A2	133
Lake City Beach	700	-0.5	-0.1	+0.4	005	A1	139
Lake Clinch	750,950	-2.4	-0.7	+1.5	025	A5	110
Lake Conine	375	-0.8	-0.3	+0.8	010	A2	131
Lake Cummings	375	-4.3	-2.3	+0.1	045	A9	134
Lake Daisy	375,550	-1.2	0.4	+0.8	010	A2	131
Lake Deer	345	-0.8	-0.3	+0.7	010	A2	142
Lake Deeson	305,310	-3.6	-0.9	+1.4	035	A7	133

[1] Flood Insurance Rate Map Panel [2] Weighted Average [3] Rounded to Nearest Foot

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

LAKE BENTLEY-LAKE BONNY-LAKE BUCKEYE-LAKE BUFFUM-LAKE CANNON-LAKE CITY BEACH-LAKE CLINCH-LAKE CONINE-LAKE CUMMINGS-LAKE DAISY-LAKE DEER-LAKE DEESON

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FHF	ZONE	BASE FLOOD ELEVATION[3]
		10% (10 YR.)	2% (50 YR.)	0.2% (500 YR.)			
Peace River							
Reach 1	900	-3.6	-1.1	+2.7	035	A7	Varies
Reach 2	700,900	-3.0	-0.9	+2.0	030	A6	Varies
Reach 3	700	-2.6	-0.9	+1.7	025	A5	Varies
Reach 4	700	-2.0	-0.7	+1.2	020	A4	Varies
Reach 5	700	-1.4	-0.4	+1.0	015	A3	Varies
Reach 6	525, 700	-0.8	-0.4	+0.9	010	A2	Varies
Reach 7	525	-1.4	-0.4	+0.9	015	A3	Varies
Peace River Drainage Canal							
Reach 1	525	-1.7	-0.5	+1.5	015	A3	Varies
Reach 2	525, 550	-2.7	-0.8	+1.7	025	A5	Varies
Reach 3	550	-2.0	-0.5	+1.7	020	A4	Varies
Reach 4	550	-3.1	-0.8	+1.8	030	A6	Varies
Peace Creek Drainage Canal							
Reach 1	375	-1.7	-0.7	+0.6	015	A3	122

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[1] FLOOD INSURANCE RATE MAP PANEL
[2] WEIGHTED AVERAGE
[3] ROUNDED TO NEAREST FOOT-SEE MAP

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

PEACE RIVER-PEACE RIVER DRAINAGE CANAL-PEACE CREEK DRAINAGE CANAL

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FHF	ZONE	BASE FLOOD ELEVATION[3]
		10% (10 YR.)	2% (50 YR.)	0.2% (500 YR.)			
Poley Creek							
Reach 1	475	-1.4	-0.4	+1.0	015	A3	Varies
Reach 2	475, 480	-2.9	-0.2	+0.3	030	A6	Varies
Reach 3	475, 480	-1.1	-0.3	+0.9	010	A2	Varies
Saddle Creek							
Reach 1	350, 525	-1.8	-0.6	+0.9	020	A4	Varies
Reach 2	350, 525	-0.4	-0.2	+0.2	005	A1	Varies
Reach 3	350	-1.0	-0.4	+0.8	010	A2	Varies
Reach 4	310, 320, 350	-1.4	-0.4	+1.2	015	A3	Varies
Southwest Ditch							
Reach 1	315	-1.0	-0.3	+1.0	010	A2	Varies
Southwest Ditch Tributary							
Reach 1	315	-1.2	-0.4	+1.8	010	A2	Varies
Bay Lake	200, 225	-0.5	-0.1	+0.4	005	A1	134

[1] FLOOD INSURANCE RATE MAP PANEL
[2] WEIGHTED AVERAGE
[3] ROUNDED TO NEAREST FOOT-SEE MAP

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

POLEY CREEK-SADDLE CREEK-SOUTHWEST DITCH-SOUTHWEST DITCH TRIBUTARY-BAY LAKE

Average Difference Between 10- and 100-Year Floods	Variation
Less than 2 feet	0.5 foot
2 to 7 feet	1.0 foot

The location of the reaches determined for the flooding sources of the unincorporated areas of Polk County are shown on the Flood Profiles (Exhibit 1) and summarized in the Flood Insurance Study Zone Data Table (Table 4).

5.2 Flood Hazard Factors (FHFs)

The FHF is used to correlate flood information with insurance rate tables. Correlations between property damages from floods and their assigned FHFs are used to set actuarial insurance premium rate tables based on FHFs from 005 to 200.

The FHF for a reach is the average weighted difference between the 10- and 100-year flood water-surface elevations expressed to the nearest one-half foot, and shown as a three-digit code. For example, if the difference between the water-surface elevations of the 10- and 100-year floods is 0.7 foot, the FHF is 005; if the difference is 1.4 feet, the FHF is 015; if the difference is 5.0 feet, the FHF is 050. When the difference between the 10- and 100-year flood water-surface elevations is greater than 10.0 feet, the accuracy for the FHF is to the nearest foot.

5.3 Flood Insurance Zones

After the determination of reaches and their respective FHFs, the entire unincorporated area of Polk County was divided into zones, each having a specific flood potential or hazard. Each zone was assigned one of the following flood insurance zone designations.

Zone A:	Special Flood Hazard Areas inundated by the 100-year flood, determined by approximate methods; no base flood elevations shown or FHFs determined.
Zone AH:	Special Flood Hazard Areas inundated by types of 100-year shallow flooding where depths are between 1.0 and 3.0 feet; base flood elevations are shown, but no FHFs are determined.
Zones A1, A2, A3, A4, A5, A6, A7, A9, A10 and A12:	Special Flood Hazard Areas inundated by the 100-year flood, determined by detailed methods; base flood elevations shown, and zones subdivided according to FHFs.

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100 YEAR) FLOOD AND			FHF	ZONE	BASE FLOOD ELEVATION[3]
		10% (10 YR)	2% (50 YR)	0.2% (500 YR)			
Blackwater Creek Tributary							
Reach 1	285	-2.0	-0.3	+0.2	020	A4	Varies
Reach 2	285	-1.1	-0.5	+0.2	010	A2	Varies
Haines City Drainage Canal							
Reach 1	375	-1.5	-0.5	+1.0	015	A3	124
Reach 2	375	-0.5	-0.3	+0.8	005	A1	124
Itchepackessassa Creek							
Reach 1	285, 295	-1.0	-0.2	+0.3	010	A2	Varies
Reach 2	285	-2.2	-0.7	+2.6	020	A4	Varies
Reach 3	285,305	-1.5	-0.4	+1.1	015	A3	Varies
Reach 4	305, 315	-2.0	-0.1	+0.6	020	A4	Varies
Lake Gibson Drain							
Reach 1	305	-1.7	-0.3	+0.5	015	A3	Varies
Reach 2	305	-1.1	-0.2	+0.5	010	A2	Varies

[1] FLOOD INSURANCE RATE MAP PANEL
[2] WEIGHTED AVERAGE
[3] ROUNDED TO NEAREST FOOT SEE MAP

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

BLACKWATER CREEK TRIBUTARY - HAINES CITY DRAINAGE CANAL - ITCHEPACKESASSA CREEK - LAKE GIBSON DRAIN

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION (FEET NGVD)[3]
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
Lake Pierce	400, 575, 600	-0.8	-0.2	+0.5	010	A2	79
Lake Rochelle	375	-0.8	-0.3	+0.8	010	A2	131
Lake Rosalie	600	-0.7	-0.2	+0.4	005	A1	56
Lake Roy	375, 550	-0.8	-0.3	+0.7	010	A2	133
Lake Shipp	375	-0.8	-0.3	+0.7	010	A2	133
Lake Smart	375	-0.6	-0.3	+0.8	010	A2	131
Lake Summit	375, 550	-0.8	-0.3	+0.7	010	A2	133
Lake Trask	400	-3.3	-1.1	+2.9	035	A7	118
Lake Van	350	-1.7	-0.4	+0.9	015	A3	135
Lake Weohyakapka	600, 775	-0.6	-0.2	+0.3	005	A1	64
Lake Whistler	350	-0.6	-0.1	+0.4	005	A1	142
Lake Winterset	550	-0.8	-0.3	+0.7	010	A2	133

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[1] Flood Insurance Rate Map Panel

[2] Weighted Average

[3] Rounded to Nearest Foot

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

LAKE PIERCE-LAKE ROCHELLE-LAKE ROSALIE-LAKE ROY-LAKE SHIPP-LAKE SMART-LAKE SUMMIT-LAKE TRASK-LAKE VAN-LAKE WEOHYAKAPKA-LAKE WHISTLER-LAKE WINTERSET

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FHF	ZONE	BASE FLOOD ELEVATION[3]
		10% (10 YR.)	2% (50 YR.)	0.2% (500 YR.)			
Reedy Lake	750, 775, 950, 975	-1.1	-0.3	+0.7	010	A2	81
Saddlebag Lake	600	-1.4	-0.4	+0.2	015	A3	108
Southeast Lakes	480, 500	-0.5	-0.2	+0.3	005	A1	113
St. Claire Lake	200,225,350, 375	-1.7	-0.4	+0.9	015	A3	135
Skyview Lake	320	-0.6	-0.1	+0.1	005	A1	137
Tangerine Lake	225	-1.7	-0.4	+0.9	015	A3	135
Tower Lake	225	-2.5	-0.7	+1.4	025	A5	134
Unnamed Lake South of Dundee	400	-5.9	-1.8	+2.7	060	A12	142
Ponding Areas	400	*	*	*	*	AH	115
	400	*	*	*	*	AH	110
	375,400,550, 575	*	*	*	*	AH	122

*Not determined

[1] FLOOD INSURANCE RATE MAP PANEL
[2] WEIGHTED AVERAGE
[3] ROUNDED TO NEAREST FOOT SEE MAP

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

REEDY LAKE-SADDLEBAG LAKE-SOUTHEAST LAKES-ST. CLAIRE LAKE-SKYVIEW LAKE
TANGERINE LAKE-TOWER LAKE-UNNAMED LAKE SOUTH OF DUNDEE-PONDING AREAS

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Peace River (cont.)								
E	434,000	2,010	26,459	0.73	73.8	73.8	74.8	1.0
F	436,000	1,400	15,957	1.20	74.2	74.2	75.2	1.0
G	439,200	1,600	19,779	0.97	75.2	75.2	76.2	1.0
H	441,000	1,800	18,012	1.07	75.7	75.7	76.7	1.0
I	444,000	1,670	20,476	0.94	76.7	76.7	77.7	1.0
J	449,000	2,100	22,421	0.86	77.9	77.9	78.9	1.0
K	451,000	1,550	22,500	0.85	78.3	78.3	79.3	1.0
L	454,000	1,750	25,689	0.75	78.8	78.8	79.8	1.0
M	455,800	1,450	17,180	0.77	79.4	79.4	80.4	1.0
N	457,200	1,300	13,878	0.95	79.8	79.8	80.7	0.9
O	459,100	1,340	14,546	0.91	80.2	80.2	81.1	0.9
P	460,900	1,190	12,813	1.03	80.7	80.7	81.6	0.9
Q	463,600	1,560	15,940	0.83	81.4	81.4	82.4	1.0
R	466,150	1,010	10,564	1.09	82.2	82.2	83.1	0.9
S	466,400	1,900	17,521	0.66	82.6	82.6	83.4	0.8
T	467,900	1,640	20,080	0.57	82.7	82.7	83.5	0.8
U	470,600	1,220	14,907	0.77	83.2	83.2	84.1	0.9
V	473,000	1,050	12,358	0.68	83.8	83.8	84.7	0.9
W	475,100	1,200	13,740	0.61	84.2	84.2	85.1	0.9
X	477,700	1,477[2]	15,662	0.54	84.5	84.5	85.4	0.9
Y	479,300	1,392[2]	12,401	0.68	84.8	84.8	85.7	0.9
Z	481,300	1,400[2]	13,458	0.63	85.1	85.1	86.0	0.9

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[1] Feet above mouth.

[2] Located in Area Not Included.

[3] Floodway width extends beyond county limits.

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

FLOODWAY DATA

PEACE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Peace River								
(cont.) AA	482,200	1,740[2]	15,070	0.56	85.2	85.2	86.2	1.0
AB	484,100	1,200[2]	10,157	0.85	85.3	85.3	86.2	0.9
AC	486,600	1,200[2]	12,910	0.65	85.4	85.4	86.4	1.0
AD	488,600	1,200	10,988	0.77	85.5	85.5	86.4	0.9
AE	490,800	1,400	13,020	0.65	85.6	85.6	86.5	0.9
AF	493,000	1,300	11,787	0.72	85.7	85.7	86.6	0.9
AG	494,690	770	5,226	1.62	86.0	86.0	87.0	1.0
AH	495,040	300	2,265	3.73	86.6	86.6	87.4	0.8
AI	496,500	1,510	12,428	0.68	87.4	87.4	88.1	0.7
AJ	498,000	1,290	10,065	0.84	87.5	87.5	88.2	0.7
AK	500,000	1,060	8,526	0.99	87.6	87.6	88.4	0.8
AL	501,500	1,280	9,300	0.91	87.7	87.7	88.4	0.7
AM	503,200	1,080	8,843	0.96	87.8	87.8	88.6	0.8
AN	505,000	640	5,090	1.66	88.0	88.0	88.8	0.8
AO	506,400	1,040	8,090	1.04	88.2	88.2	89.0	0.8
AP	507,800	300	2,629	3.21	88.8	88.8	89.5	0.7
AQ	509,400	650	5,659	1.49	89.7	89.7	90.4	0.7
AR	511,000	700	5,002	1.69	89.9	89.9	90.6	0.7
AS	512,700	930	6,447	1.31	90.2	90.2	90.9	0.7
AT	514,100	1,110	7,385	1.14	90.6	90.6	91.4	0.8

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[1] Feet above mouth.

[2] Floodway width extends beyond county limits.

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

FLOODWAY DATA

PEACE RIVER

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FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Peace River (cont.)								
AU	514,500	1,560	12,065	0.70	90.8	90.8	91.5	0.7
AV	516,130	1,060	7,357	0.99	91.0	91.0	91.8	0.8
AW	518,300	730	5,687	1.27	91.2	91.2	92.0	0.8
AX	520,200	750	6,315	1.15	91.8	91.8	92.6	0.8
AY	522,200	900	6,782	1.07	92.0	92.0	92.9	0.9
AZ	524,350	2,180	17,228	0.42	92.1	92.1	93.0	0.9
BA	525,760	220	1,596	4.54	92.3	92.3	93.3	1.0
BB	527,530	1,370	9,868	0.73	93.6	93.6	94.6	1.0
BC	529,140	1,270	9,871	0.73	93.7	93.7	94.7	1.0
BD	530,550	1,040	7,767	0.93	93.8	93.8	94.8	1.0
BE	532,140	750	5,162	1.40	93.9	93.9	94.9	1.0
BF	533,800	1,850	8,024	0.90	94.6	94.6	95.6	1.0
BG	534,100	670	4,686	1.55	95.3	95.3	96.0	0.7
BH	534,900	1,000	5,919	1.22	95.6	95.6	96.3	0.7
BI	536,800	1,450	11,403	0.64	95.7	95.7	96.4	0.7
BJ	538,800	950	7,628	0.95	95.7	95.7	96.5	0.8
BK	543,400	1,000	7,370	0.98	96.4	96.4	97.2	0.8
BL	543,700	1,280	9,643	0.75	96.5	96.5	97.4	0.9
BM	545.100	670	2,279	3.18	97.7	97.7	98.6	0.9
BN	546,700	2,460	18,628	0.39	98.1	98.1	99.0	0.9
BO	549,150	1376/468[2]	10,550	0.69	98.1	98.1	99.0	0.9

[1] Feet above mouth

[2] Total width/width within county limits.

TABLE 3	FEDERAL EMERGENCY MANAGEMENT AGENCY **POLK COUNTY, FL** **(UNINCORPORATED AREAS)**	**FLOODWAY DATA**
		39 **PEACE RIVER**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Peace River								
(cont.) BP	550,400	2224/1664[2]	16,720	0.43	98.1	98.1	99.0	0.9
BQ	552,050	3060/2600[2]	31,280	0.23	98.1	98.1	99.0	0.9
BR	552,400	*	*	*	98.0	98.0	*	*
BS	553,000	*	*	*	98.6	98.6	*	*
BT	553,300	*	*	*	98.8	98.8	*	*
BU	557,400	2,147	14,780	0.38	99.6	99.6	100.0	0.4
BV	559,400	2,005	13,759	0.42	99.8	99.8	100.8	1.0
Peace River Drainage Canal								
A	2,900	950	2,901	1.62	99.7	98.0[3]	99.0[3]	1.0
B	3,000	1,787	1,974	2.38	99.7	98.2[3]	99.2[3]	1.0
C	5,300	298	1,393	3.37	100.5	100.2[3]	101.1[3]	0.9
D	8,750	310	1,787	2.63	103.5	103.5	104.4	0.9
E	8,875	*	*	*	*	*	*	*
F	12,000	351	2,680	1.75	104.7	104.7	105.3	0.6
G	14,000	342	2,459	1.91	105.2	105.2	105.9	0.7
H	17,250	1,467	12,842	0.37	105.5	105.5	106.2	0.7
I	19,150	2,540	24,105	0.19	105.5	105.5	106.2	0.7
J	23,550	3,109	15,724	0.30	105.5	105.5	106.2	0.7
K	28,000	343	1,422	3.30	105.8	105.8	106.6	0.8
L	32,000	211	1,620	2.13	108.6	108.6	109.6	1.0
M	32,200	118	884	3.90	108.6	108.6	109.6	1.0

[1] Feet above mouth.

[2] Total width/width within county.

[3] Elevations computed without consideration of backwater effects.

*Not Determined, encroachment not allowed.

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

FLOODWAY DATA

PEACE RIVER - PEACE RIVER DRAINAGE CANAL

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100 YEAR) FLOOD AND			FHF	ZONE	BASE FLOOD ELEVATION[3]
		10% (10 YR.)	2% (50 YR.)	0.2% (500 YR.)			
Lake Dexter	550	-1.4	-0.4	+0.5	015	A3	133
Lake Echo	375	-1.7	-0.6	+1.2	015	A3	134
Lake Eloise	550	-0.8	-0.3	+0.7	010	A2	133
Lake Fannie	375	-1.6	-0.1	+0.2	015	A3	128
Lake Florence	375, 550	-0.4	-0.1	+0.4	005	A1	129
Lake Garfield	550	-1.8	-0.6	+1.8	020	A4	102
Lake George	375	-0.8	-0.3	+0.8	010	A2	131
Lake Gibson	305	-1.2	-0.2	+0.6	010	A2	145
Lake Haines	375	-0.8	-0.3	+0.8	010	A2	131
Lake Hamilton	37	-1.8	-0.5	+1.0	020	A4	123
Lake Hancock	350, 525	-1.8	-0.5	+1.3	020	A4	102

[1] FLOOD INSURANCE RATE MAP PANEL
[2] WEIGHTED AVERAGE
[3] ROUNDED TO NEAREST FOOT SEE MAP

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

LAKE DEXTER-LAKE ECHO-LAKE ELOISE-LAKE FANNIE-LAKE FLORENCE-
LAKE GARFIELD-LAKE GOERGE-LAKE GIBSON-LAKE HAINES-LAKE HAMILTON-LAKE HANCOCK

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100 YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION[3] (FEET NGVD)
		10% (10 YEAR)	2% (50 YEAR)	0.2% (500 YEAR)			
Lake Hartridge	345,375	-0.8	-0.3	0.7	010	A2	133
Lake Helene	200	-2.4	-0.5	0.2	025	A5	147
Lake Henry	375	-0.5	-0.2	0.3	005	A1	128
Lake Ida	750	-1.1	-0.3	0.7	010	A2	81
Lake Idylwild	345	-0.8	-0.3	0.7	010	A2	133
Lake Jessie	345	-0.8	-0.3	0.7	010	A2	133
Lake John	315,480	-1.4	0.4	0.9	015	A3	113
Lake Juliana	200,350	1.7	-0.4	0.9	015	A3	135
Lake Kissimmee	600,625,800,825	-1.9	1.5	N/A	020	A4	55
Lake Lena	345,350	-1.2	0.4	0.7	010	A2	128
Lake Lowery	200,225,375	-2.5	-0.7	1.4	025	A5	134
Lake Lucerne	375	-1.7	0.6	1.1	015	A3	134

[1] FLOOD INSURANCE RATE MAP PANEL
[2] WEIGHTED AVERAGE
[3] ROUNDED TO NEAREST FOOT

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

LAKE HARTRIDGE—LAKE HELENE—LAKE HENRY—LAKE IDA—LAKE IDYLWILD—LAKE JESSIE—
LAKE JOHN—LAKE JULIANA—LAKE KISSIMMEE—LAKE LENA—LAKE LOWERY—LAKE LUCERNE

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100 YEAR) FLOOD AND			FHF	ZONE	BASE FLOOD ELEVATION[3]
		10% (10 YR.)	2% (50 YR.)	0.2% (500 YR.)			
Lake Gibson Drain (continued)							
Reach 3	305	-0.1	-0.0	+0.0	005	A1	Varies
Lake Hunter Drain							
Reach 1	315	-0.5	-0.1	+0.1	005	A1	Varies
Lake John Drain							
Reach 1	500	-1.4	-0.4	+1.1	015	A3	Varies
Lake Lena Drain							
Reach 1	525	-1.7	-0.5	-1.3	015	A3	Varies
Reach 2	345,525	-0.2	-0.0	+0.1	005	A1	Varies
Reach 3	345	-1.1	-0.5	+0.4	010	A2	Varies
Lake Parker Drain							
Reach 1	320	-0.5	-0.1	+0.2	005	A1	Varies
Reach 2	320	-1.0	-0.2	+0.9	010	A2	Varies

[1] FLOOD INSURANCE RATE MAP PANEL
[2] WEIGHTED AVERAGE
[3] ROUNDED TO NEAREST FOOT SEE MAP

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

LAKE GIBSON DRAIN - LAKE HUNTER DRAIN - LAKE JOHN DRAIN - LAKE LENA DRAIN - LAKE PARKER DRAIN

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FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FHF	ZONE	BASE FLOOD ELEVATION[3]
		10% (10 YR.)	2% (50 YR.)	0.2% (500 YR.)			
Lake Parker Tributary							
Reach 1	305	-0.7	-0.1	+0.5	005	A1	Varies
Lake Rosalie Tributary							
Reach 1	600	-1.9	-0.3	+1.4	020	A4	Varies
Reach 2	600	-3.0	-0.1	+0.2	030	A6	Varies
Reach 3	600	-1.6	-0.1	+0.3	015	A3	Varies
Lester Lake Drain							
Reach 1	150,285	-1.0	-0.3	+0.7	010	A2	Varies
Mud Lake Drain							
Reach 1	180, 190	-0.7	-0.3	+0.5	005	A1	Varies
North Prong Alafia River							
Reach 1	475	-2.6	-0.7	+2.0	025	A5	Varies
Reach 2	475, 500	-1.9	-0.5	+1.2	020	A4	Varies
Reach 3	500	-1.5	-0.7	+0.9	015	A3	Varies

[1] FLOOD INSURANCE RATE MAP PANEL
[2] WEIGHTED AVERAGE
[3] ROUNDED TO NEAREST FOOT SEE MAP

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

LAKE PARKER TRIBUTARY-LAKE ROSALIE TRIBUTARY-LESTER LAKE DRAIN-MUD LAKE DRAIN- NORTH PRONG ALAFIA RIVER

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100 YEAR) FLOOD AND			FHF	ZONE	BASE FLOOD ELEVATION[3]
		10% (10 YR.)	2% (50 YR.)	0.2% (500 YR.)			
Lake Lulu	550	-0.8	-0.3	+0.7	010	A2	133
Lake Mariam	375	-0.7	-0.1	+0.3	005	A1	126
Lake Mariana	350	-0.9	-0.2	+0.7	010	A2	139
Lake Marion	400	-0.4	-0.1	+0.2	005	A1	68
Lake Mattie	200, 225, 350, 375	-1.7	-0.4	+0.9	015	A3	135
Lake Otis	375	-1.2	-0.3	+0.6	010	A2	130
Lake Pansy	375	-0.8	-0.3	+0.8	010	A2	131
Lake Parker	305, 310, 320	-0.8	-0.2	+0.5	010	A2	132
Lake Parker Tributary Swamp	305	-1.2	-0.5	+1.1	010	A2	140

[1] FLOOD INSURANCE RATE MAP PANEL
[2] WEIGHTED AVERAGE
[3] ROUNDED TO NEAREST FOOT-SEE MAP

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

LAKE LULU-LAKE MARIAM-LAKE MARIANA-LAKE MARION-LAKE MATTIE-LAKE OTIS-
LAKE PANSY-LAKE PARKER-LAKE PARKER TRIBUTARY SWAMP

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND 10% (10 YR.)	2% (50 YR.)	0.2% (500 YR.)	FHF	ZONE	BASE FLOOD ELEVATION[3]
Lester Lake	150,175,285, 305	-1.0	-0.3	+0.8	010	A2	130
Little Lake Agnes	200	-1.2	-0.4	+0.5	010	A2	136
Little Lake Hamilton	375, 400	-1.8	-0.5	+1.0	020	A4	123
Mine Pits, Southeast of Lakeland							
Pit 1	320	-0.1	-0.0	+0.1	005	A1	135
Pit 2	320	-0.5	-0.3	+0.5	005	A1	136
Pit 3	320	-0.2	-0.1	+0.0	005	A1	136
Mud Lake	190	-1.0	-0.3	+0.8	010	A2	141
Ned Lake	550	-0.3	-0.0	+0.2	005	A1	131

[1] FLOOD INSURANCE RATE MAP PANEL
[2] WEIGHTED AVERAGE
[3] ROUNDED TO NEAREST FOOT SEE MAP

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

LESTER LAKE-LITTLE LAKE AGNES 190-LITTLE LAKE HAMILTON-
MINE PITS SOUTHEAST OF LAKELAND-MUD LAKE-NED LAKE

Zone B:	Areas between the Special Flood Hazard Area and the limits of the 500-year flood, including areas of the 500-year flood plain that are protected from the 100-year flood by dike, levee, or other water control structure; areas subject to certain types of 100-year shallow flooding where depths are less than 1.0 foot; or areas subject to 100-year flooding from sources with drainage not subdivided.
Zone C:	Areas of minimal flooding.

Table 4, "Flood Insurance Zone Data," summarizes the flood elevation differences, FHFs, flood insurance zones, and base flood elevations for each flooding source studied in detail in the unincorporated areas of Polk County.

5.4 Flood Insurance Rate Map Description

The Flood Insurance Rate Map for the unincorporated areas of Polk County are, for insurance purposes, the principal result of the Flood Insurance Study. This map (published separately) contains the official delineation of flood insurance zones and base flood elevation lines. Base flood elevation lines show the locations of the expected whole-foot water-surface elevations of the base (100-year) flood. This map is developed in accordance with the latest flood insurance map preparation guidelines published by FEMA.

6.0 OTHER STUDIES

In 1974, the COE published Intermediate Regional Flood (equivalent to 100-year flood) and Standard Project Flood discharges and profiles for Peace River and Saddle Creek (Reference 23). Subsequently, in October 1974, the mean annual, 5-, 10-, 25-, and 50-year flood profiles were computed. These discharges and elevations were based on storms and floods that have occurred in regions of like topography, watershed cover, and physical characteristics.

The flood elevations for Lake Hancock by the Corps of Engineers as part of the Saddle Creek flood profiles (Reference 23) were used by the Southwest Florida Water Management District in their report of lake flood frequency in Polk County (Reference 5).

Comparison of the results of a recent analysis of Lake Hancock flood-stage frequency by the contractor (Reference 24) with the COE flood elevations for Lake Hancock resulted in differences of 1.2, 1.9, and 2.0 feet for the 10-, 50- and 100-year floods, respectively. Discharges and flood profile elevations for Peace River from the Bartow gaging station to the confluence of Saddle Creek are in close agreement. The significant differences occur in the Saddle Creek discharges and profile elevations from the confluence to the upstream limit of the COE study reach at U.S. Highway 92. The study contractor's peak discharges for Saddle Creek below Lake Hancock are based on correlations between discharge and stage at the Peace River at Bartow gage and the Saddle Creek at Structure P-11 gage. The selected recurrence interval peak discharges at the Bartow gage (Reference 12) were used to compute peak discharges for Saddle Creek. Above Lake Hancock, peak discharges were computed using the regional flood frequency regression (Reference 13), modified for mine pit storage.

These differences in method of analysis and results were discussed with the Jacksonville District, COE, and SWFWMD. The revised peak discharges and flood profiles were agreed upon.

1) SWFWMD "Flood-Stage Frequency Relations for Selected Lakes in Polk County" (Reference 5).

2) U.S. Army Corps of Engineers
   (a) Osceola County Flood Plain Information Report (Reference 25).
   (b) Saddle Creek Flood Plain Information Report (Reference 23).

3) U.S. Geological Survey
   Flood Insurance Study Reports for the following municipalities:

Municipality	Reference
Bartow	26
Davenport	27
Dundee	28
Fort Meade	29
Frostproof	30
Lakeland	31
Lake Hamilton	32
Haines City	33
Mulberry	34
Winter Haven	4

4) Hillsborough County
   FEMA for unincorporated areas by Tetra Tech Inc., North.
   Prong Alafia River (Reference 20).

5) FEMA Emergency Phase Flood Hazard Boundary Map (Reference 14).

7.0 LOCATION OF DATA

Information concerning the pertinent data used in preparation of this study can be obtained by contacting the Natural and Technological Hazards Division, Federal Emergency Management Agency, 1375 Peachtree Street, N.E., Atlanta, Georgia 30309.

8.0 BIBLIOGRAPHY AND REFERENCES

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16. Southwest Florida Water Management District, aerial photography with contours, scale 1:2,400, contour interval 1 foot, Lake Parker, sheets 1, 2, 11, 14.28.24, 1978.

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30 U.S. Department of Housing and Urban Development, Federal Insurance Administration, *Preliminary Flood Insurance Study, City of Frostproof, Polk County, Florida.*

31. U.S. Department of Housing and Urban Development, Federal Insurance Administration, *Preliminary Flood Insurance Study, City of Lakeland, Polk County, Florida.*

32. U.S. Department of Housing and Urban Development, Federal Insurance Administration, *Preliminary Flood Insurance Study, Town of Lake Hamilton, Polk County, Florida.*

33. U.S. Department of Housing and Urban Development, Federal Insurance Administration, *Preliminary Flood Insurance Study, City of Haines City, Polk County, Florida.*

34. U.S. Department of Housing and Urban Development, Federal Insurance Administration, *Preliminary Flood Insurance Study, City of Mulberry, Polk County, Florida.*

9.0 REVISIONS DESCRIPTION

This section has been added to provide information regarding significant revisions made since the original Flood Insurance Study was printed. Future revisions may be made that do not result in the republishing of the Flood Insurance Study report. To assure that any user is aware of all revisions, it is advisable to contact the community repository of flood hazard data located at the Polk County Planning Department, Graphics Section, Bartow, Florida.

9.1 First Revision (Revised October 18, 1988)

a. Acknowledgments

The hydraulic analyses for this Revisions Description were obtained from the U.S. Army Corps of Engineers (COE), Jacksonville District. The Federal Emergency Management Agency reviewed and accepted these data for purposes of this revision.

b. Scope

The Special Flood Hazard Area (SFHA) adjacent to Lake Kissimmee was reduced. SFHAs along Lake Mabel were increased based on U.S. Geological Survey topographic maps (Reference 35). SFHAs were removed based on revised drainage calculations. The 100-year frequency flood boundary along Poley Creek was redelineated based on new topographic data (Reference 36). SFHAs between State Route 4 and Olive Grove Road were changed based on new topographic data (Reference 37). In addition, SFHAs were revised along Lake Hamilton and along Lake Rosalie.

c. Hydrologic and Hydraulic Analyses

The information used in this revision is based on a letter from the COE stating that Lake Kissimmee is regulated by the Central and Southern Florida Works Structure 65 (Reference 38). This structure is in Osceola County, Florida. A rainfall-runoff model developed by the COE for the Kissimmee basin [illegible] the base flood elevation for Lake Kissimmee to be 55 feet National Geodetic Vertical Datum of 1929 (NGVD). The previous base flood elevation for Lake Kissimmee was 56 feet NGVD.

d. Other Studies

The Flood Insurance Study for Osceola County, Florida [illegible] is being revised in conjunction with this [illegible]. These studies will be in agreement.

e. References and Bibliography

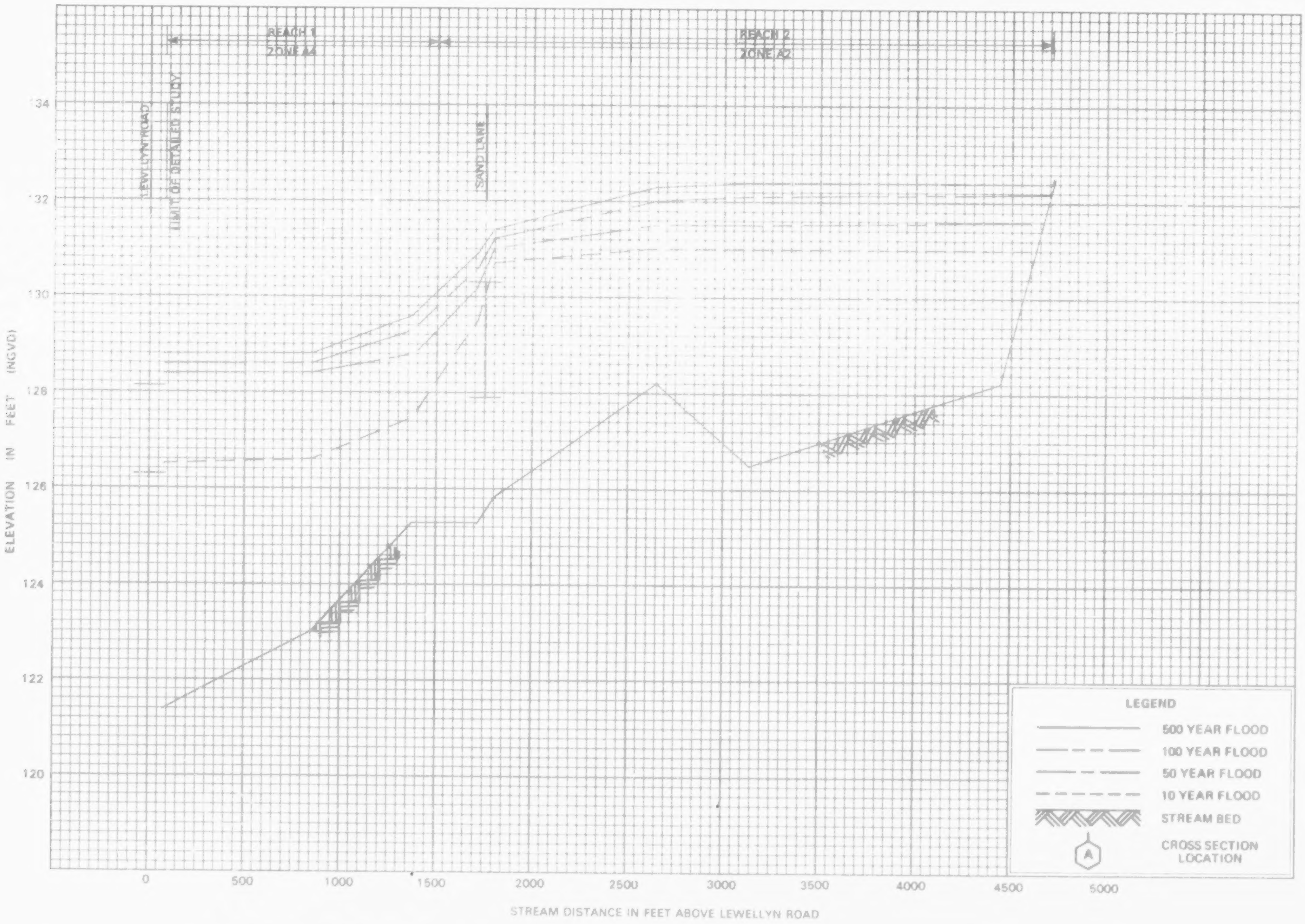
35. U.S. Geological Survey, *7.5 Minute Series Topographic Maps*, Scale 1:24000, Contour Interval 5 Feet: Auburndale, Florida, 1975; Babson Park, Florida, 1952, photorevised 1972; Bowling Green, Florida, 1955, photorevised 1972; Dundee, Florida, 1953, photorevised 1970; Frostproof, Florida, 1953, photorevised 1972; Gum Lake, Florida, 1959, photorevised 1970; Hesperides, Florida, 1952, photorevised 1972; Homeland, Florida, 1952, photorevised 1972; Lake Arbuckle, Florida, 1952, photorevised 1972; Lake Hatchineha, Florida, 1953, photoinspected 1970; Lakeland, Florida, 1975; Lake Wales, Florida, 1952, photorevised 1972; Lake Weohyakapka, Florida, 1952, photorevised 1972; Lake Weohyakapka N.E., 1952, photorevised 1972; Lake Weohyakapka S.E., 1952, photorevised 1972; Mulberry, Florida, 1949, photorevised 1972; Nichols, Florida, 1955, photorevised 1972; Plant City East, Florida, 1975; Polk City, Florida, 1975; Providence, Florida, 1975.

36. Chastain Skillman, Inc., *Boundary Survey*, Scale 1:2400, Contour Interval 1 Foot: Lakeland, Florida, April 1936.

37. Southwest Florida Water Management District, *Topographic Mapping*, Scale 1:2400, Contour Interval 1 Foot: undated.

38. U.S. Army Corps of Engineers, Jacksonville District, Letter to [illegible] Bull Engineering, Inc., December 5, 1986.

39. Federal Emergency Management Agency, *Flood Insurance Study*, Osceola County, Unincorporated Areas, Florida, [illegible], revision in progress.



FLOOD PROFILES

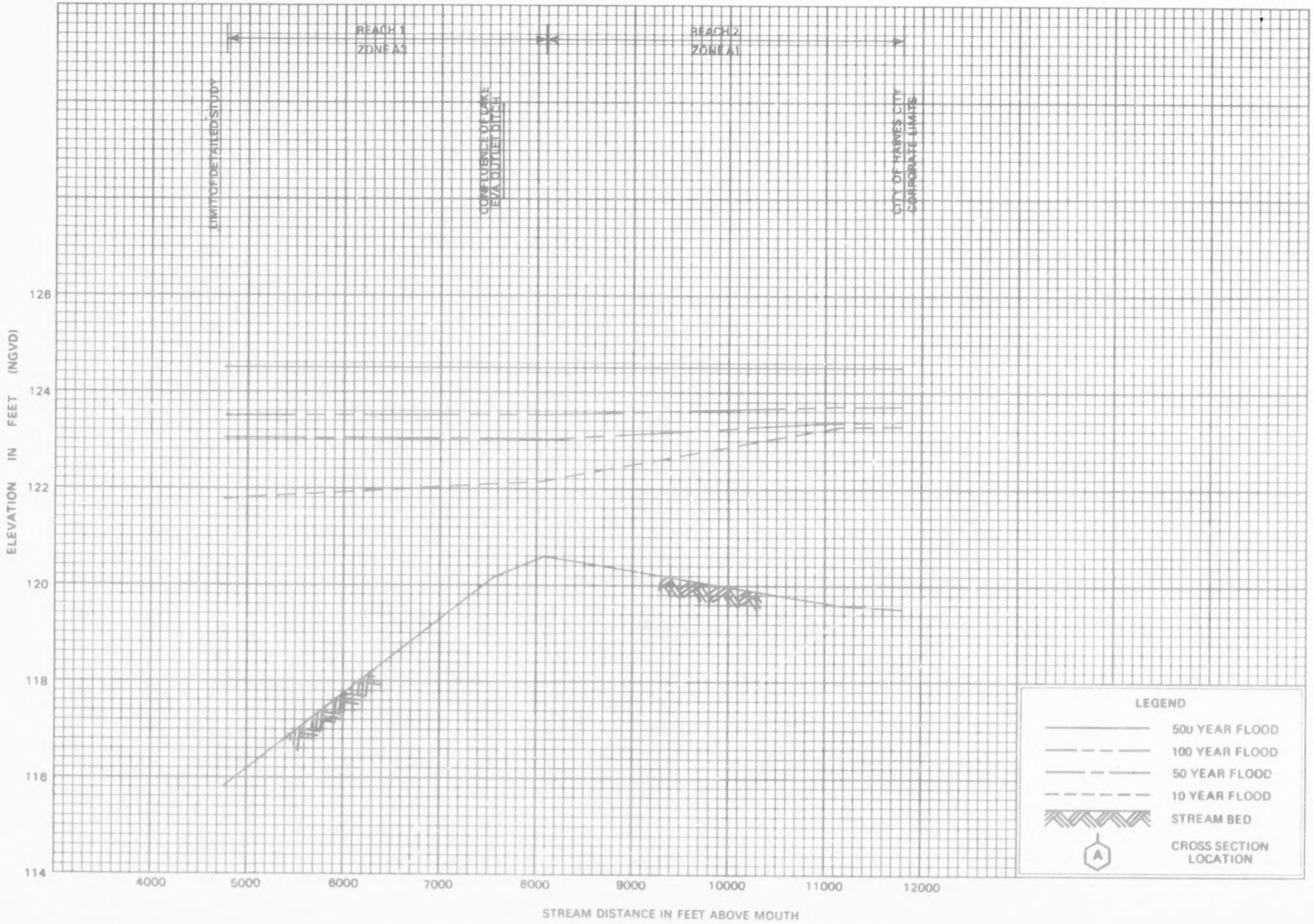
BLACKWATER CREEK TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

01P

54



FLOOD PROFILES

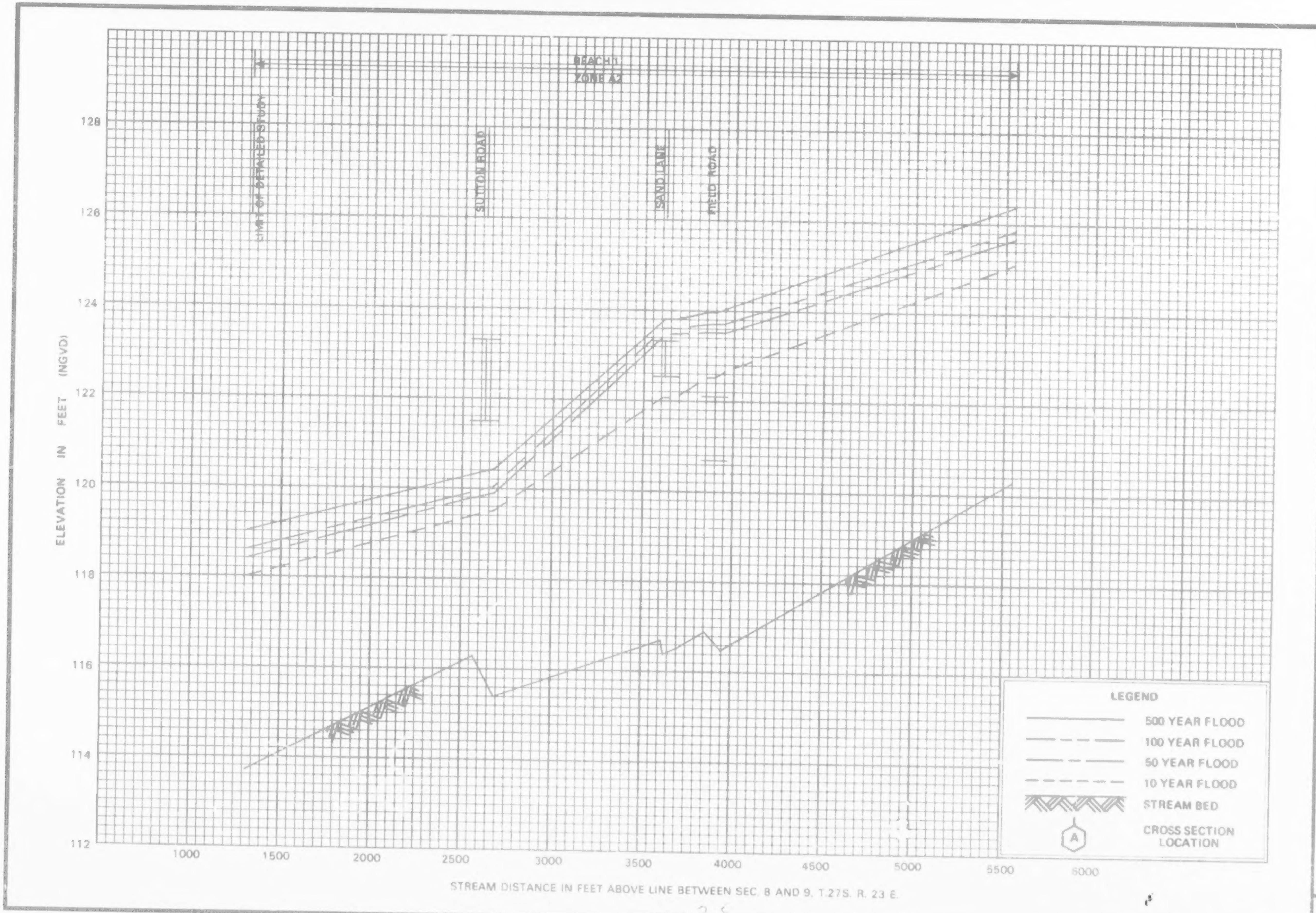
HAINES CITY DRAINAGE CANAL

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

02P



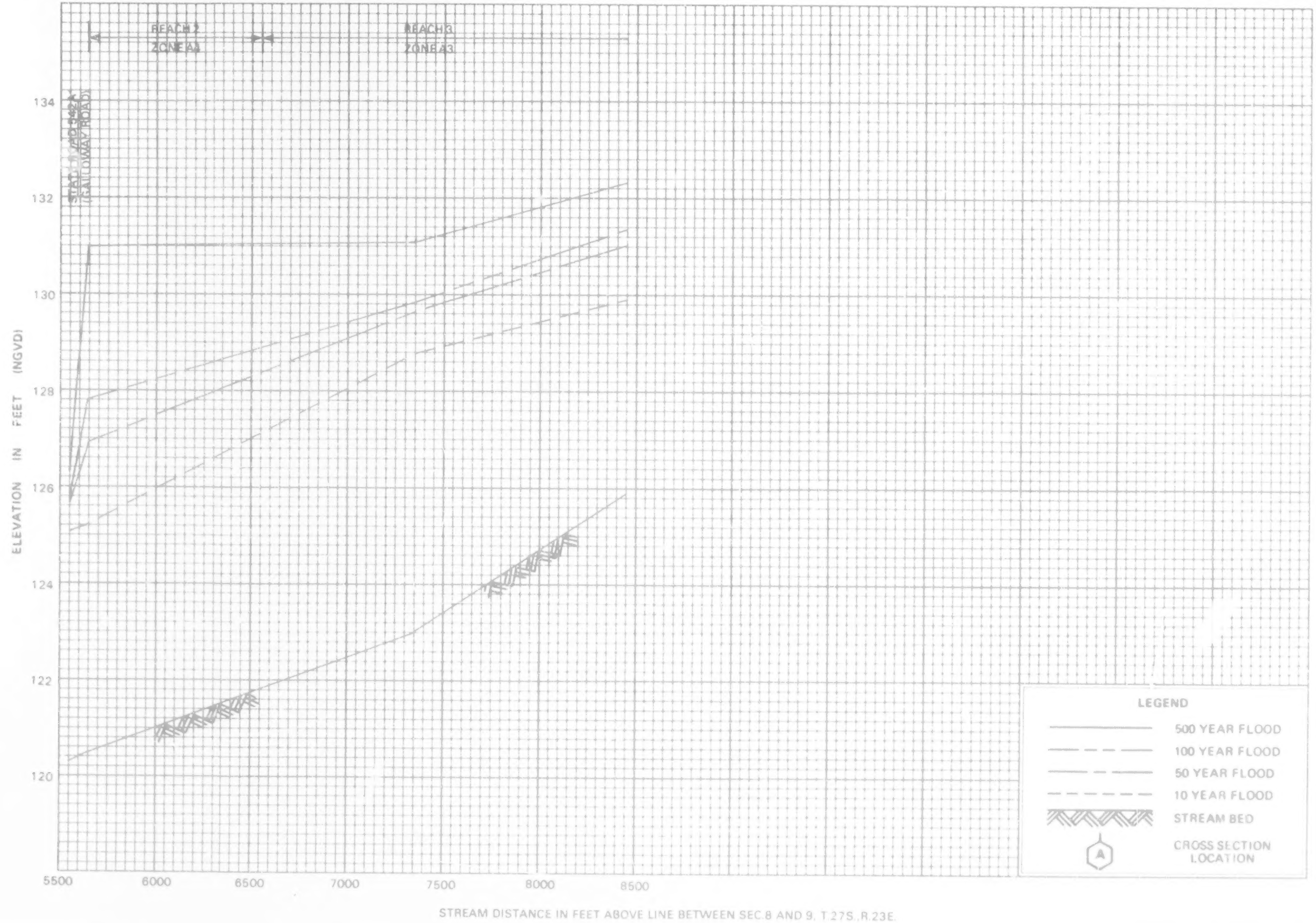
FLOOD PROFILES

ITCHEPACKESASSA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)



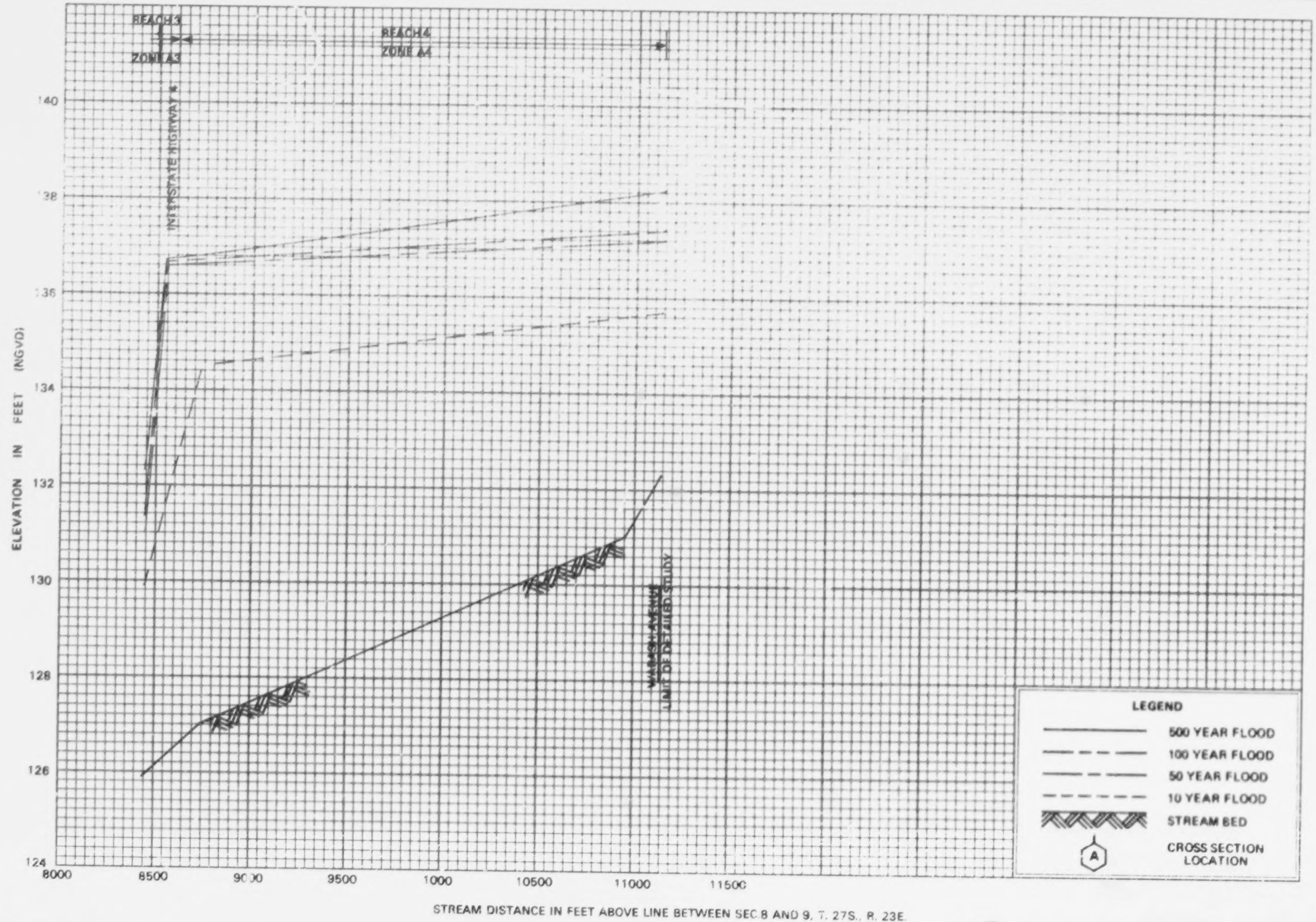
FLOOD PROFILES

ITCHEPACKESASSA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

04P



58

FLOOD PROFILES

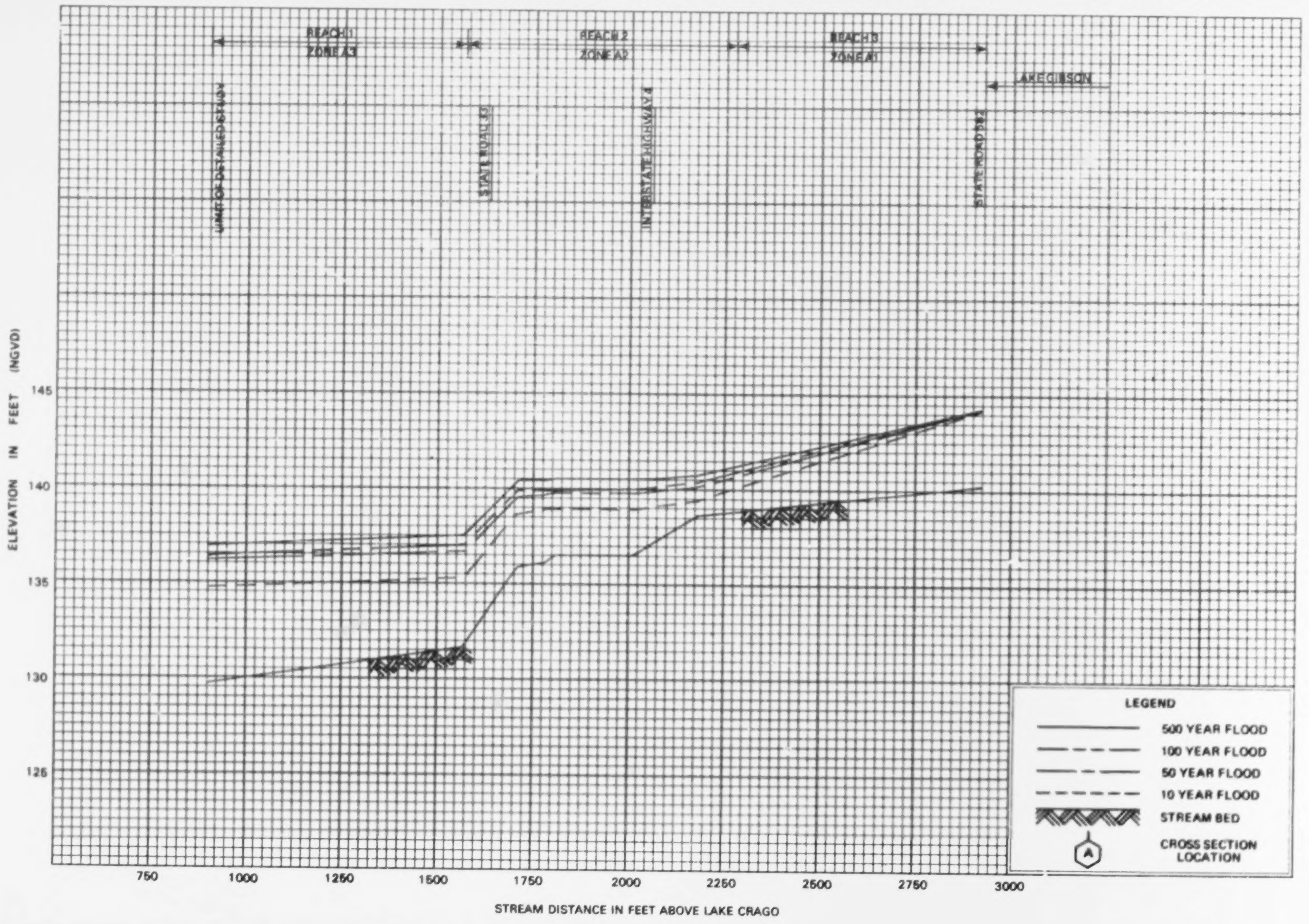
ITCHEPACKESASSA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

05P



FLOOD PROFILES

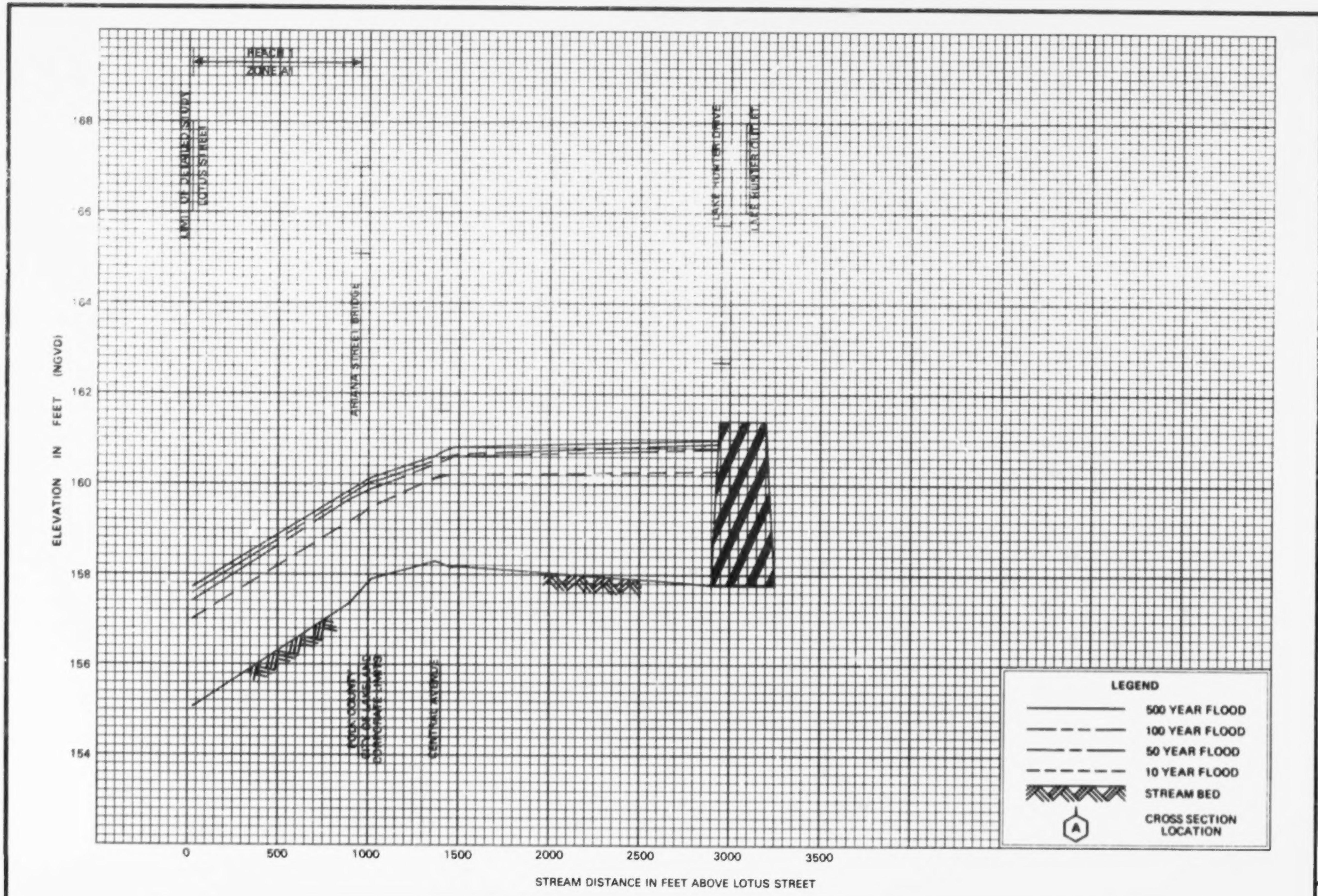
LAKE GIBSON DRAIN

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

06P

59



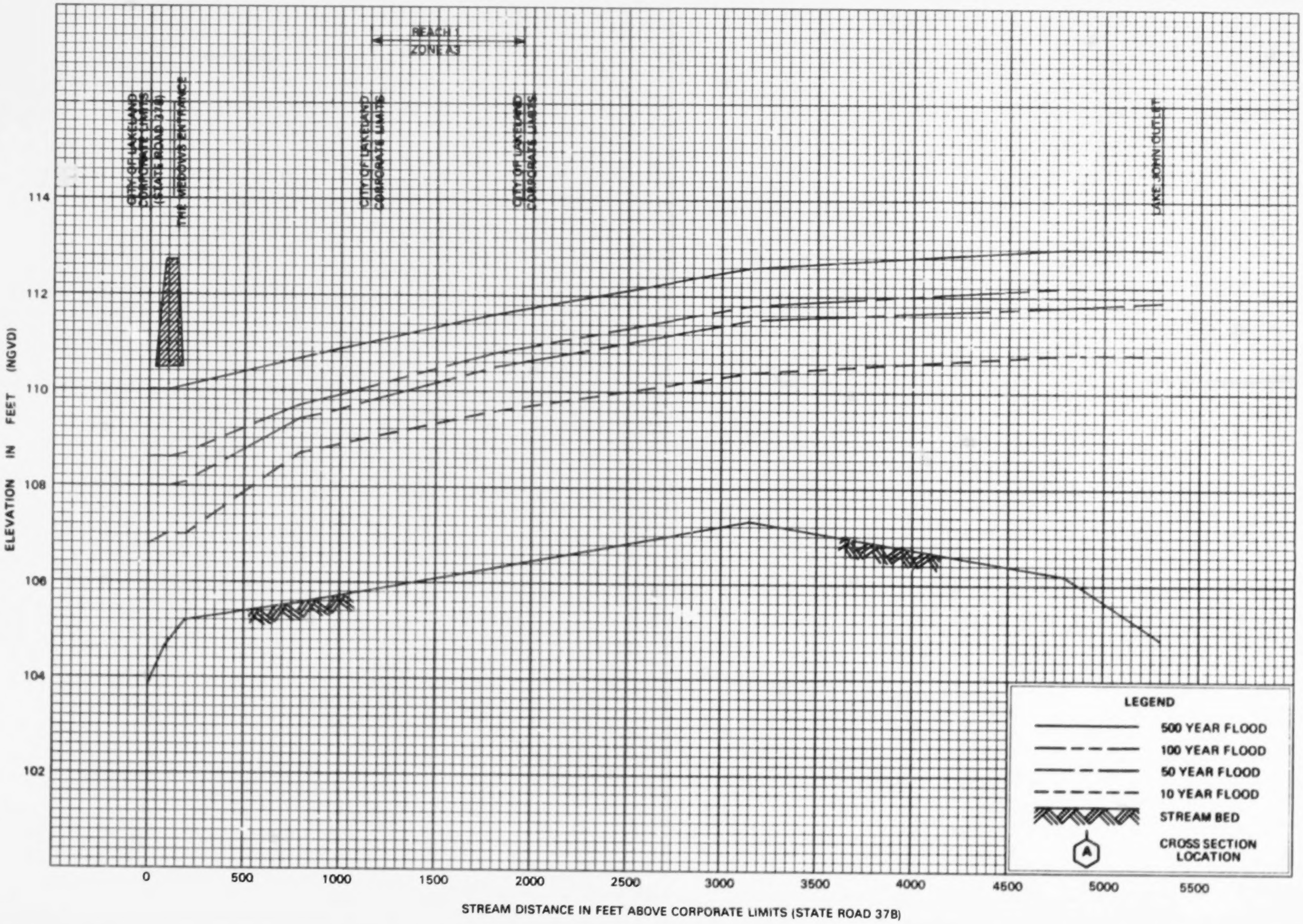
FLOOD PROFILES

LAKE HUNTER DRAIN

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

07P



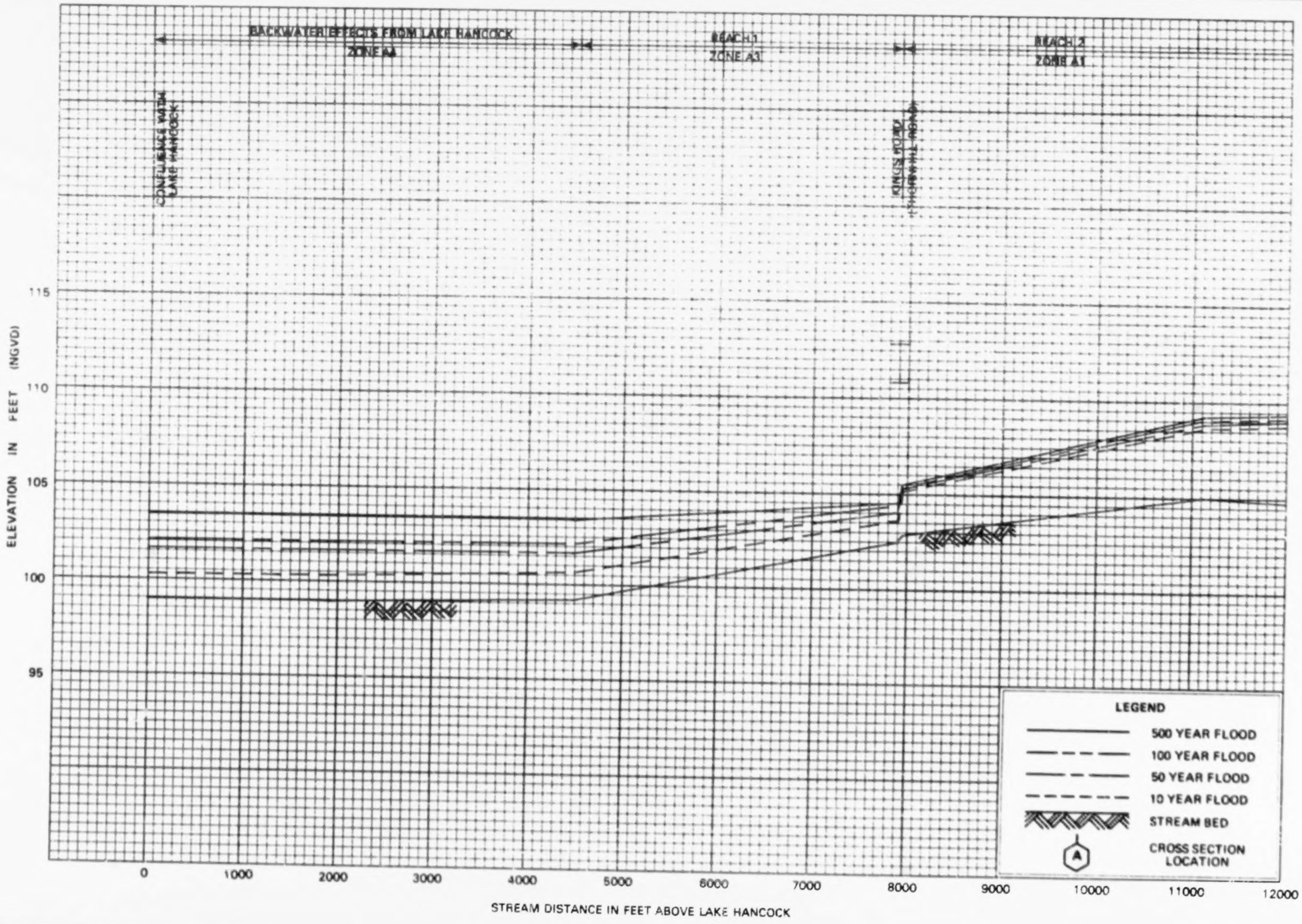
FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

FLOOD PROFILES

LAKE JOHN DRAIN

08P



6.2

FLOOD PROFILES

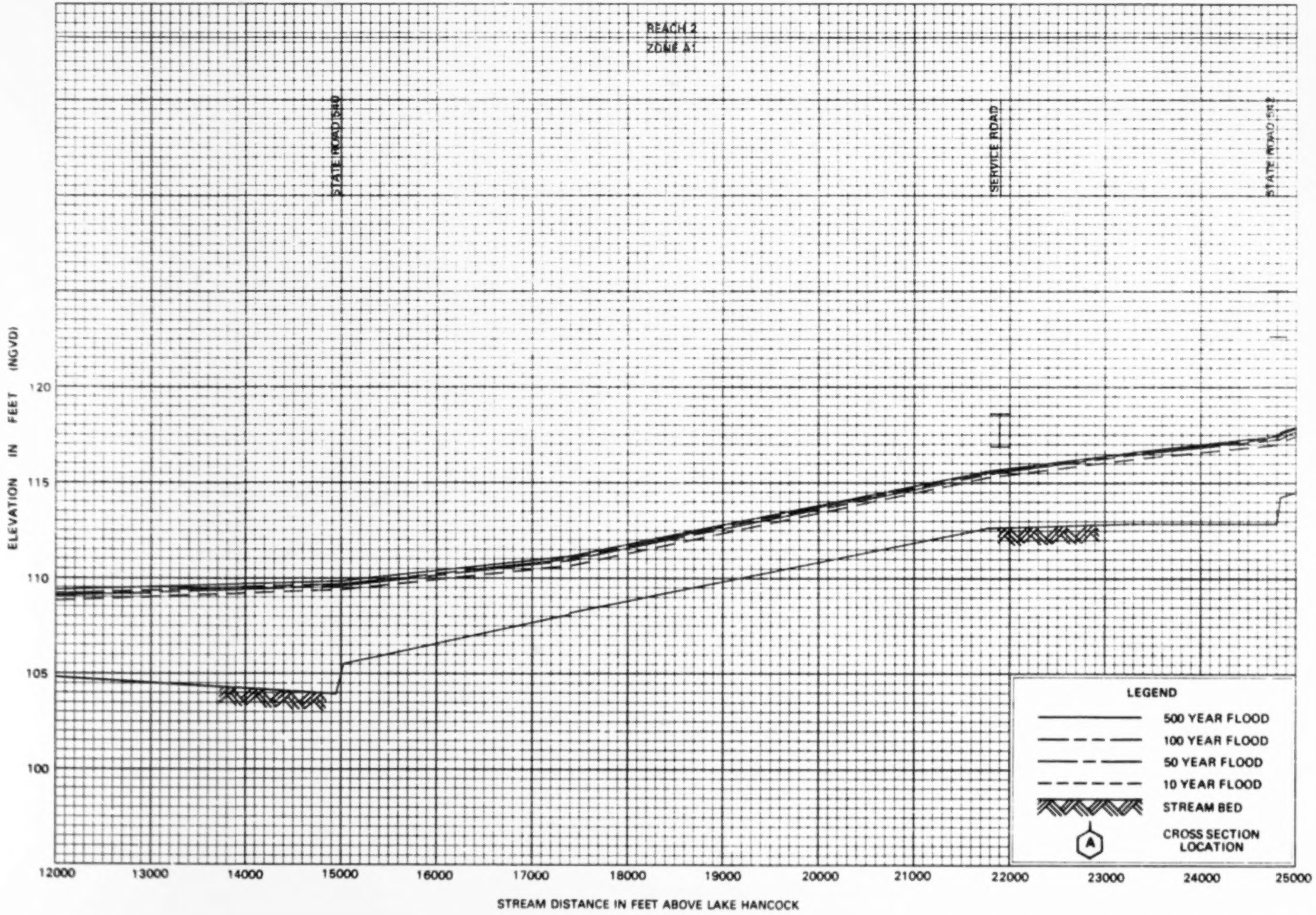
LAKE LENA DRAIN

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

09P



FLOOD PROFILES

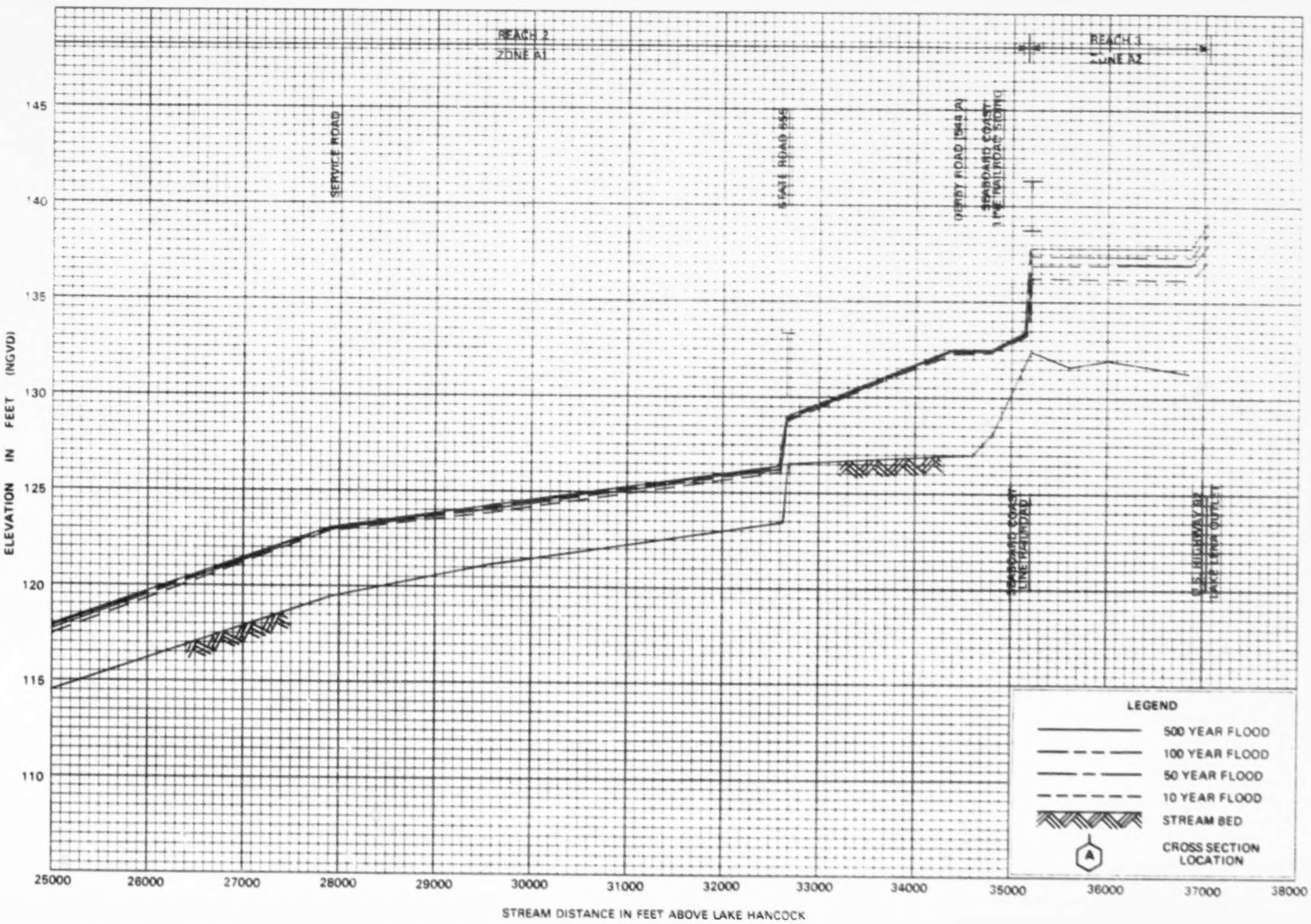
LAKE LENA DRAIN

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

10P

6-3



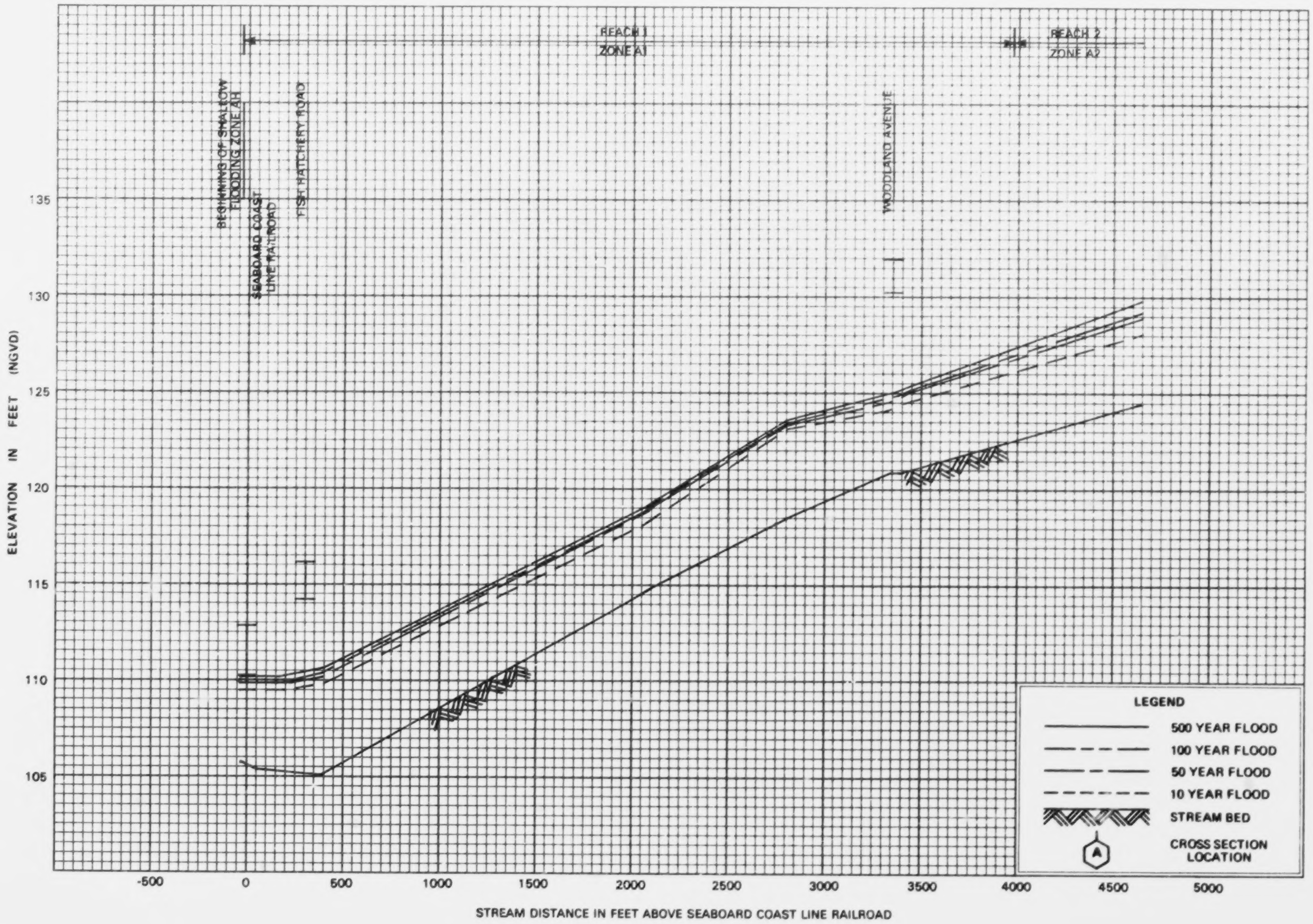
FLOOD PROFILES

LAKE LENA DRAIN

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

11P



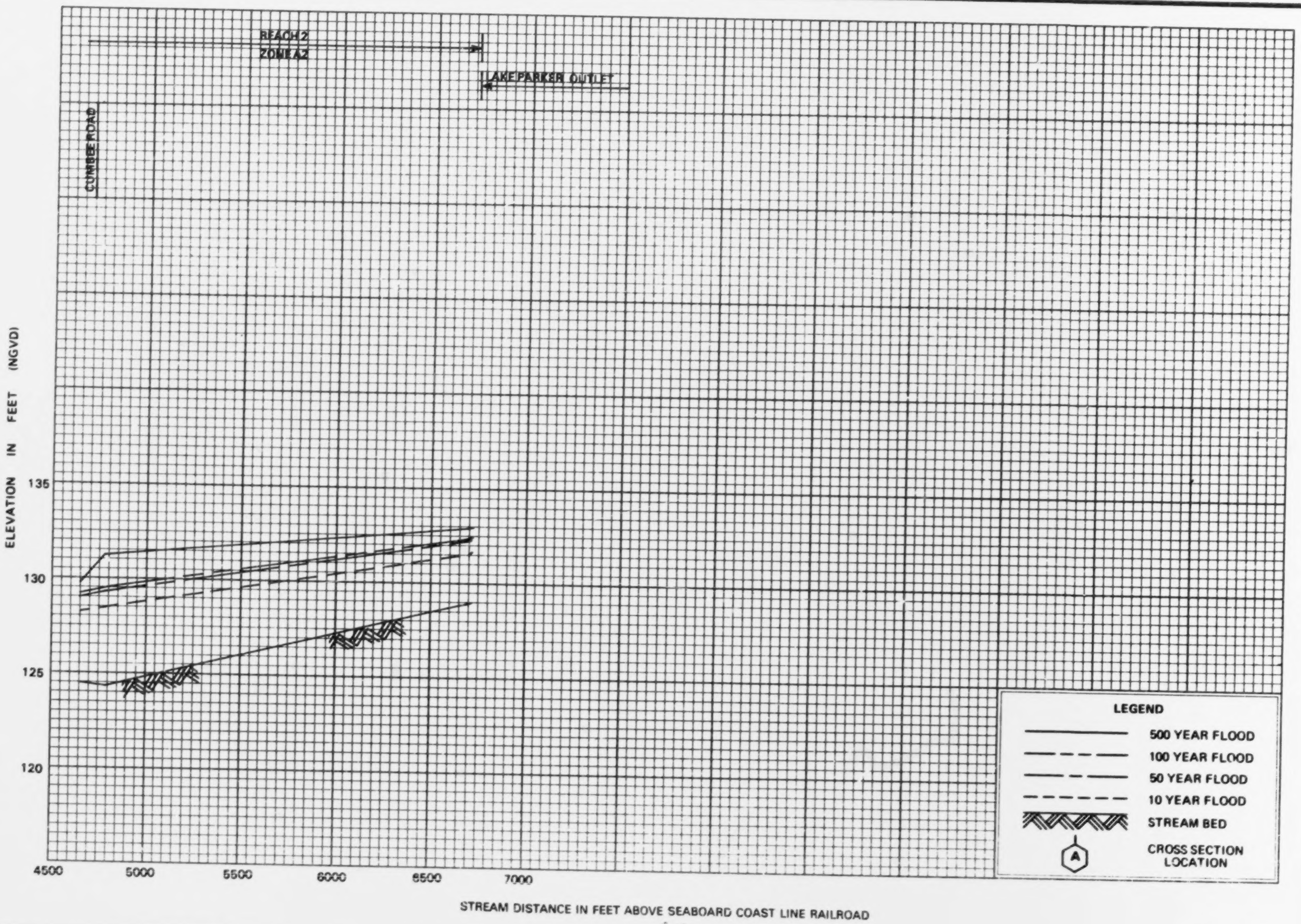
FLOOD PROFILES

LAKE PARKER DRAIN

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

12P

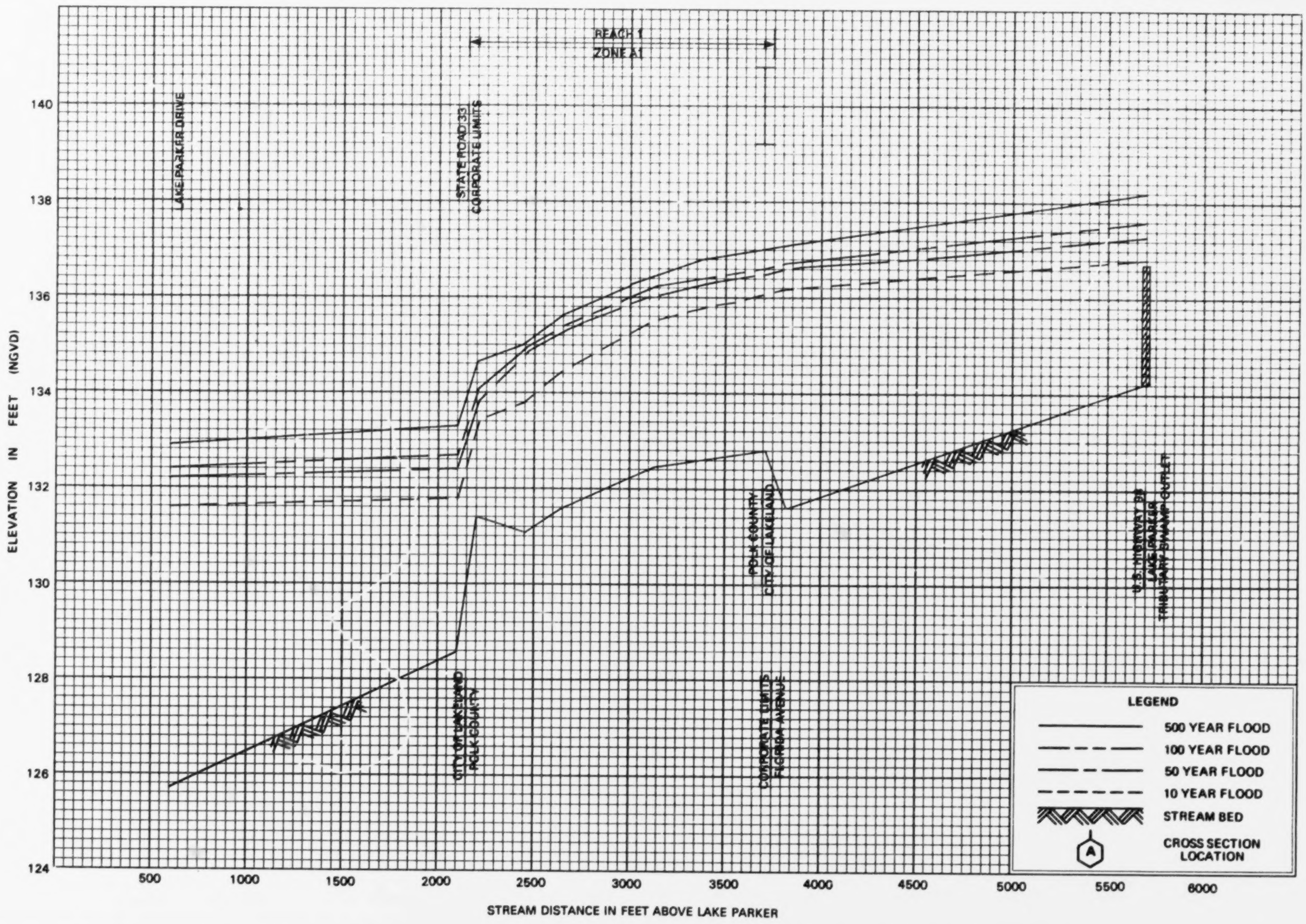


FLOOD PROFILES

LAKE PARKER DRAIN

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)



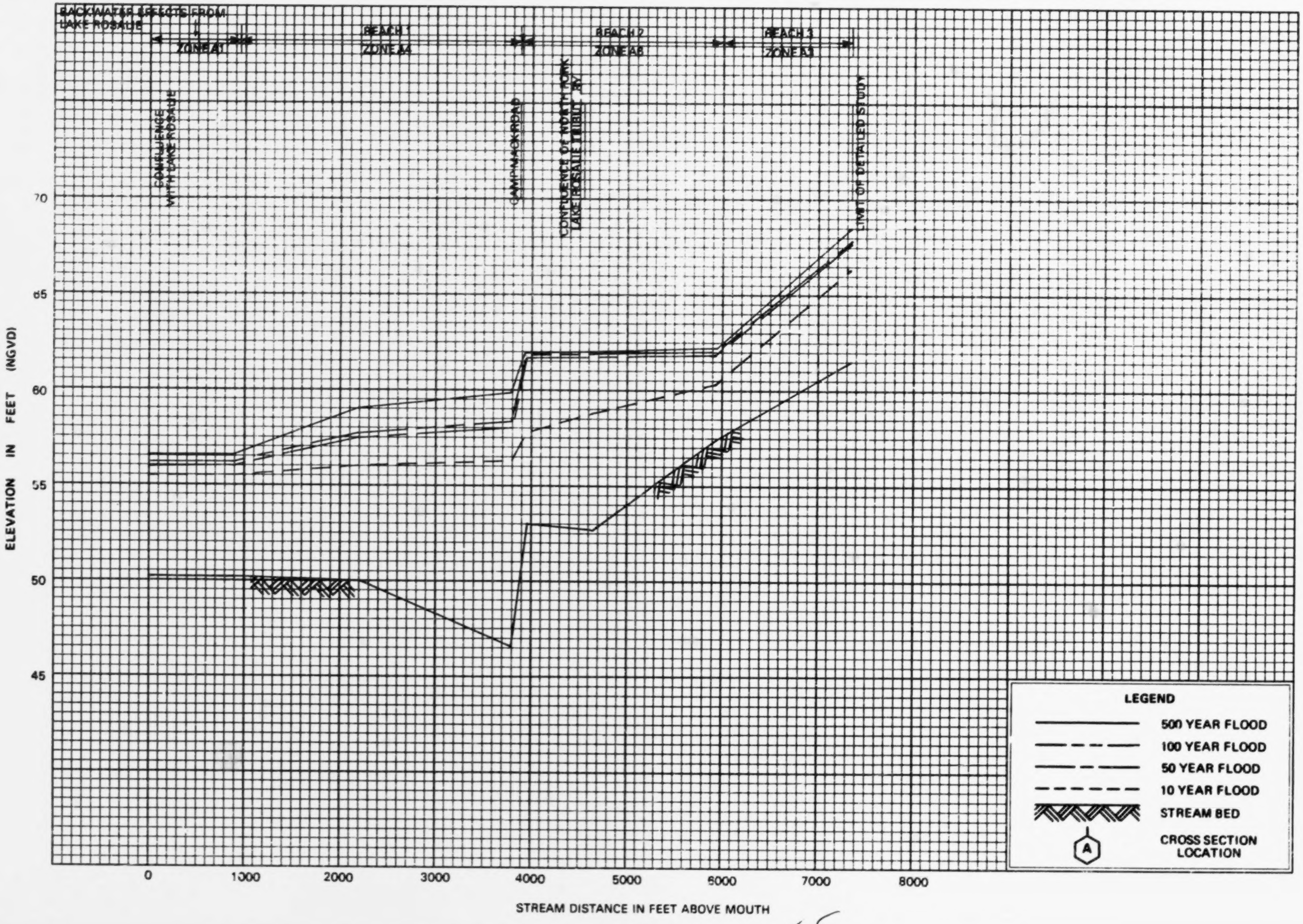
FLOOD PROFILES

LAKE PARKER TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

14P



48

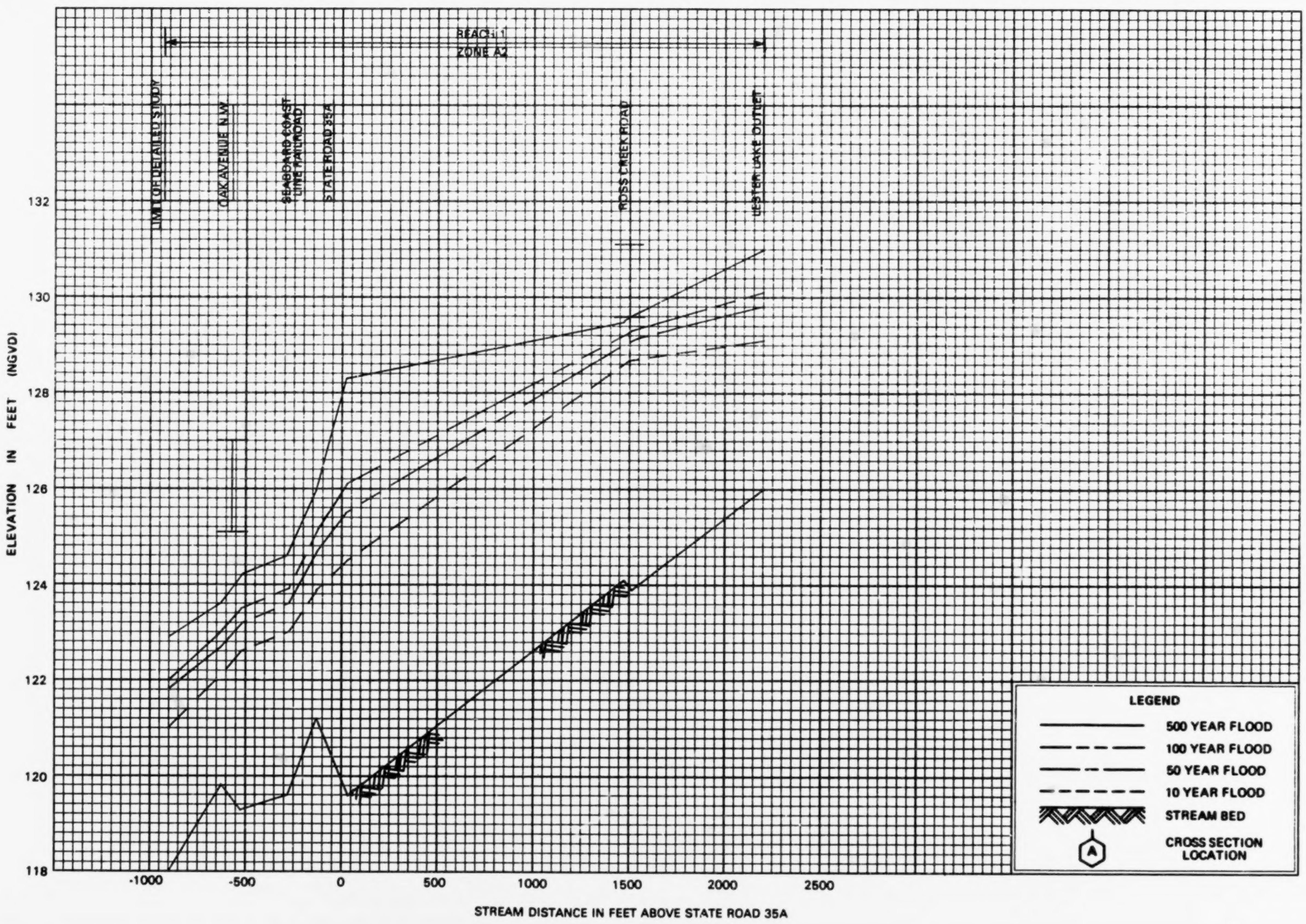
FLOOD PROFILES

LAKE ROSALIE TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

15P



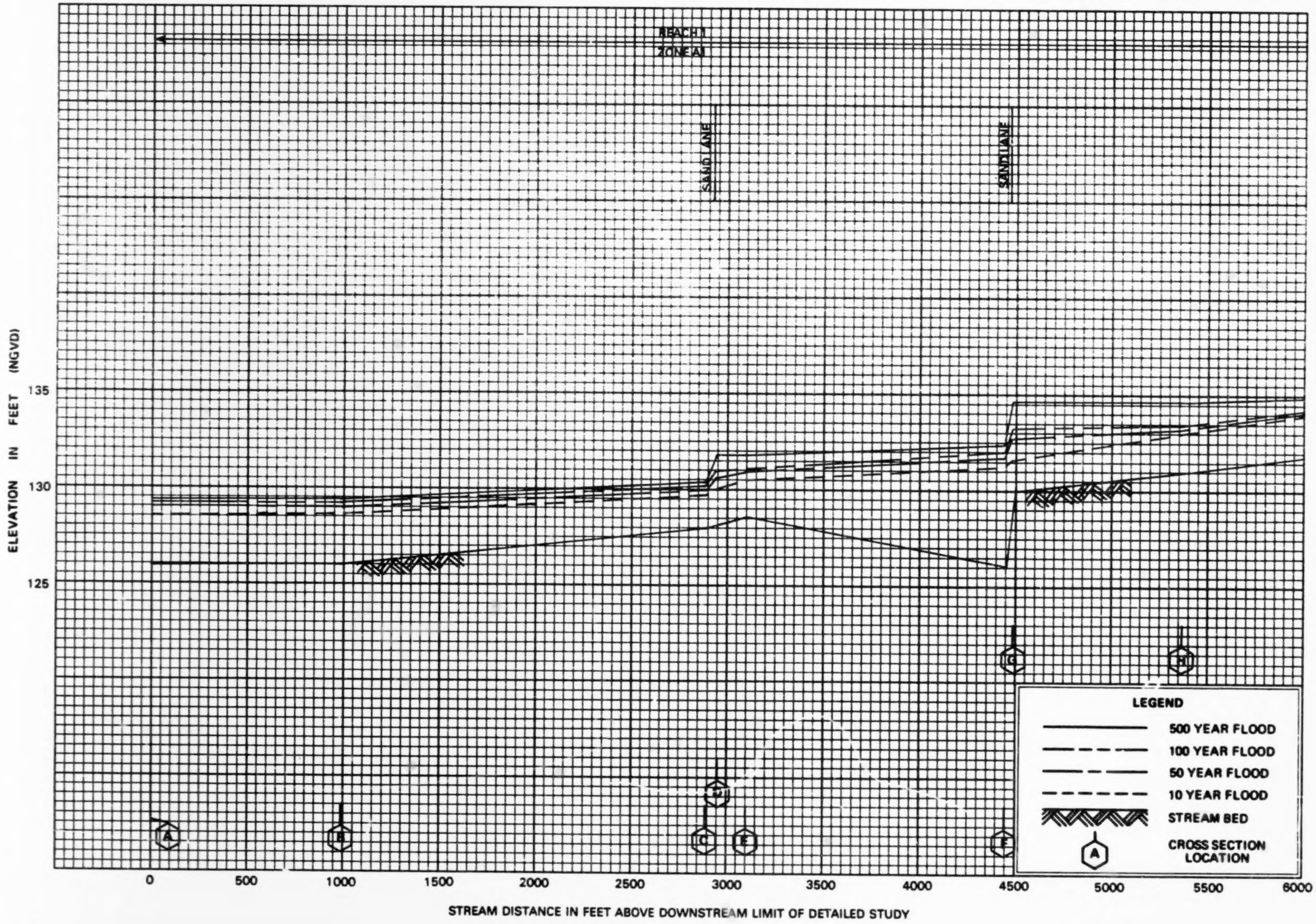
FLOOD PROFILES

LESTER LAKE DRAIN

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

16P



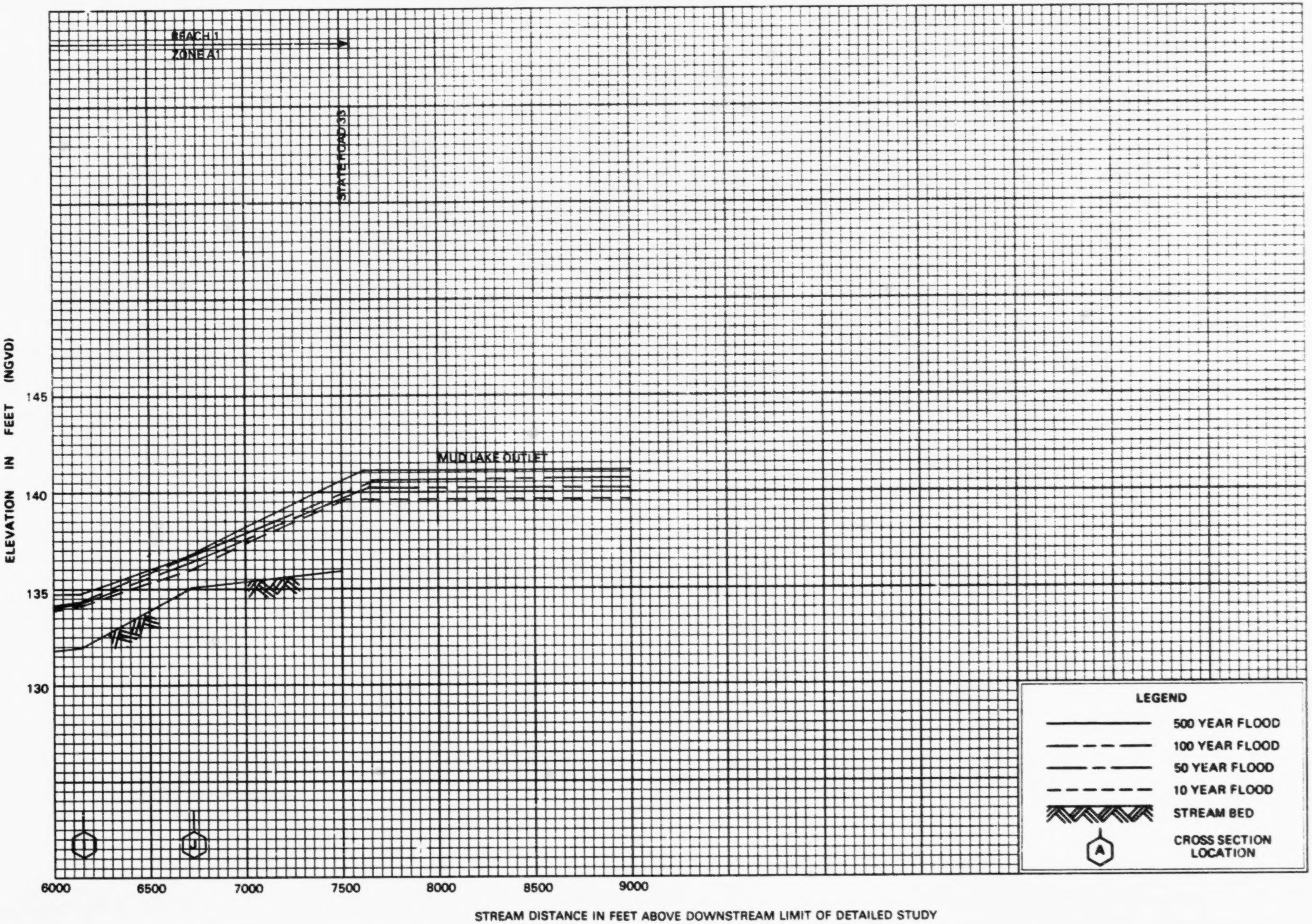
FLOOD PROFILES

MUD LAKE DRAIN

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

17P



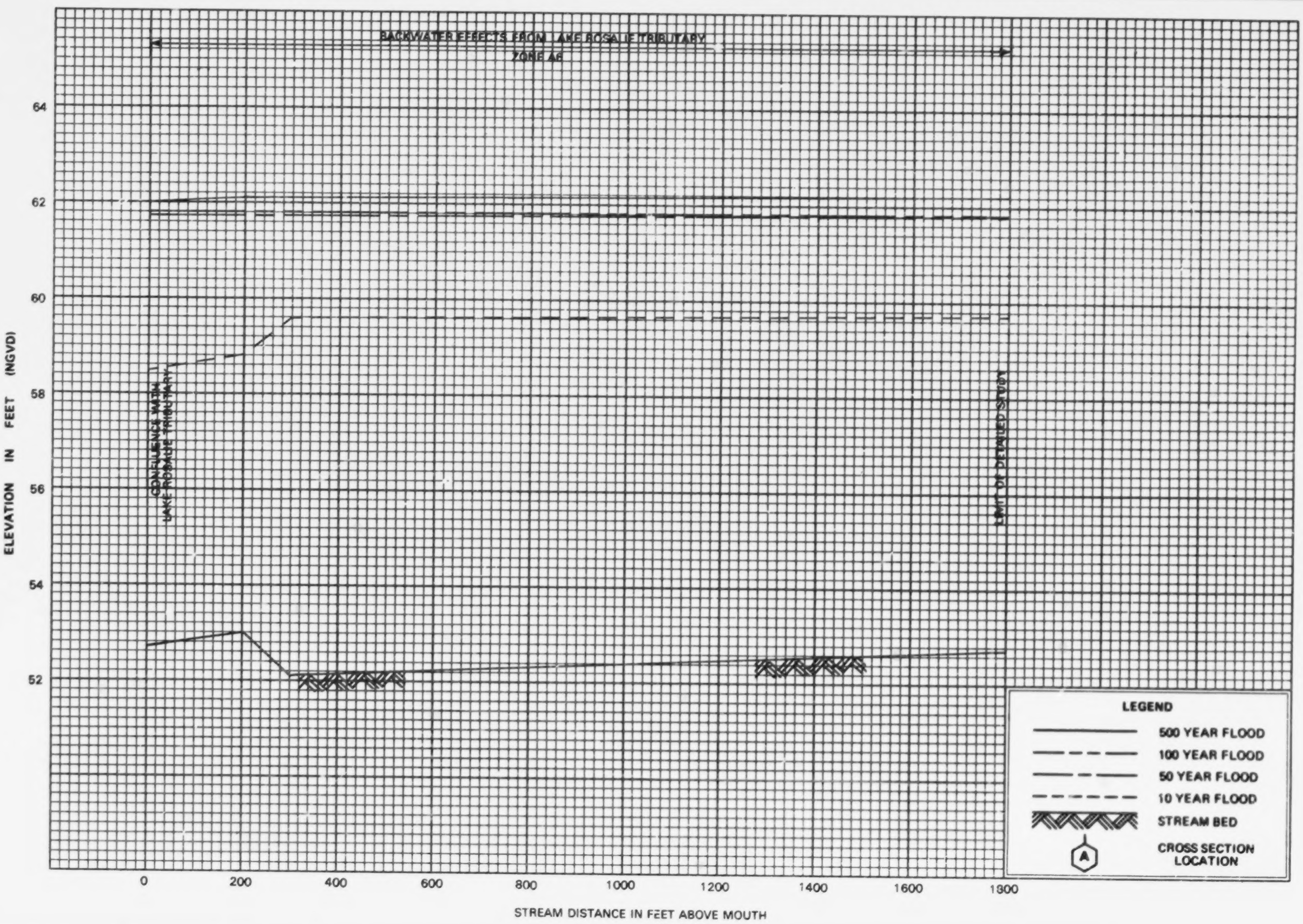
FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

FLOOD PROFILES

MUD LAKE DRAIN

18P



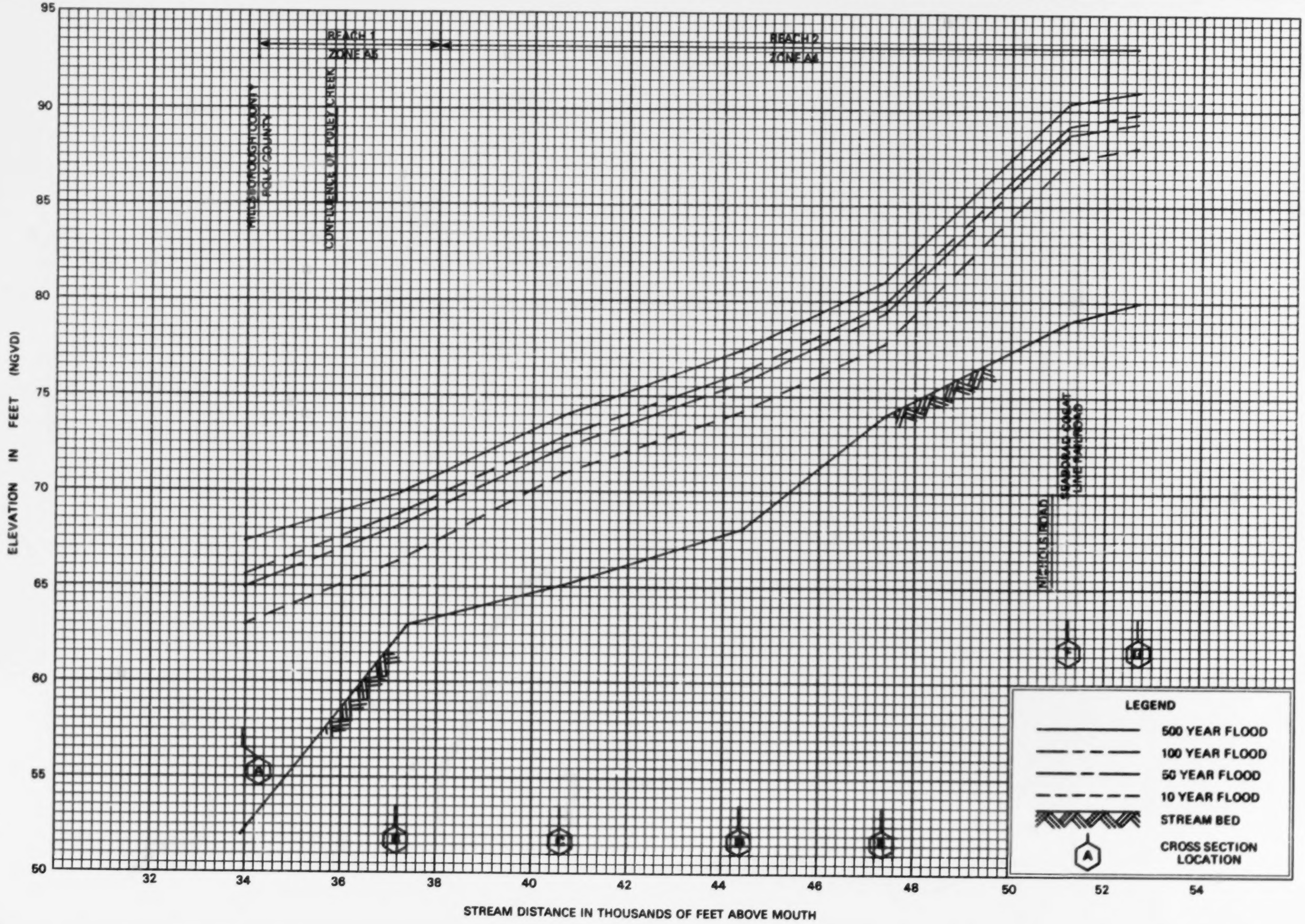
22

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

FLOOD PROFILES

NORTH FORK LAKE ROSALIE TRIBUTARY



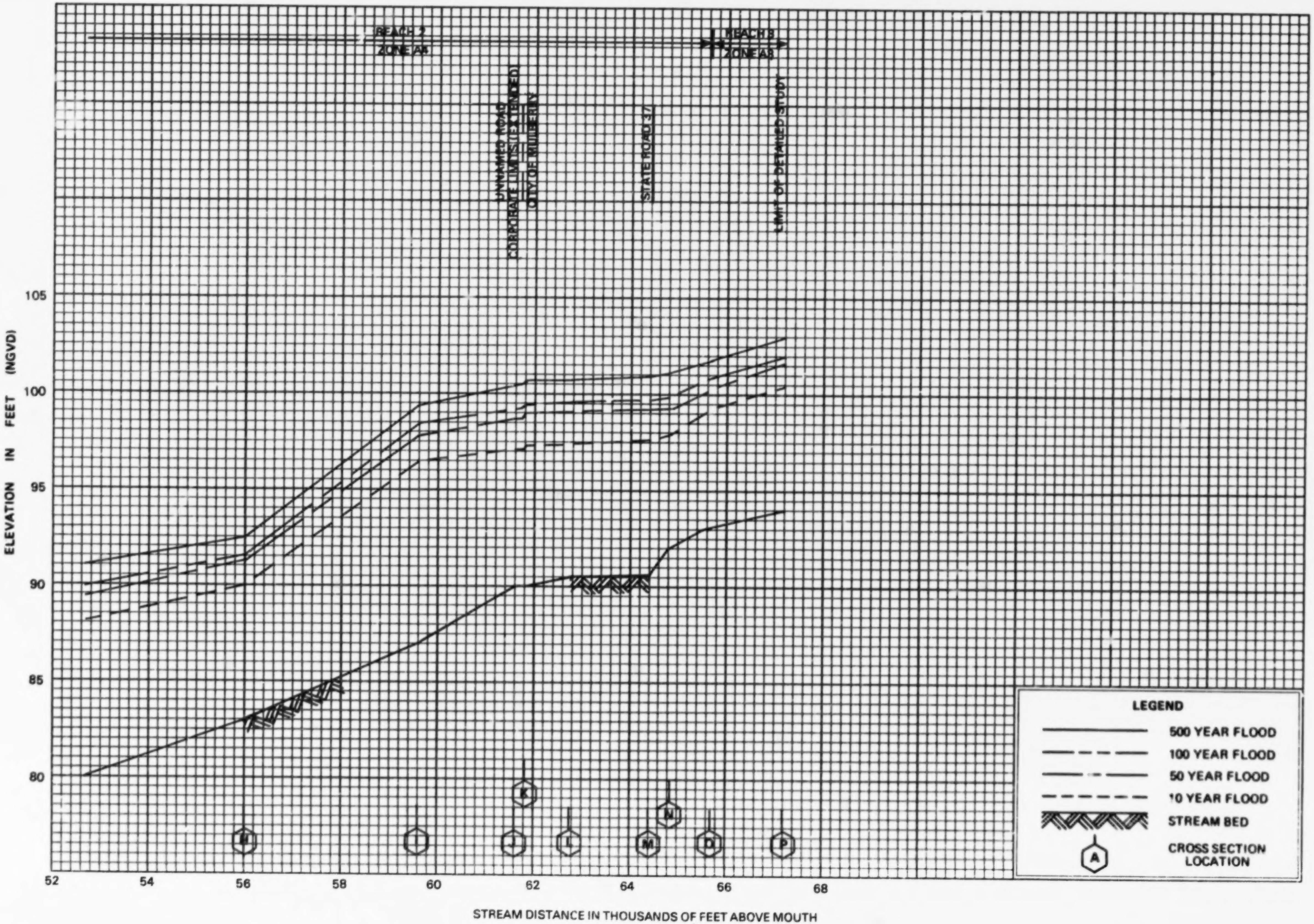
FLOOD PROFILES

NORTH PRONG ALAFIA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

20P

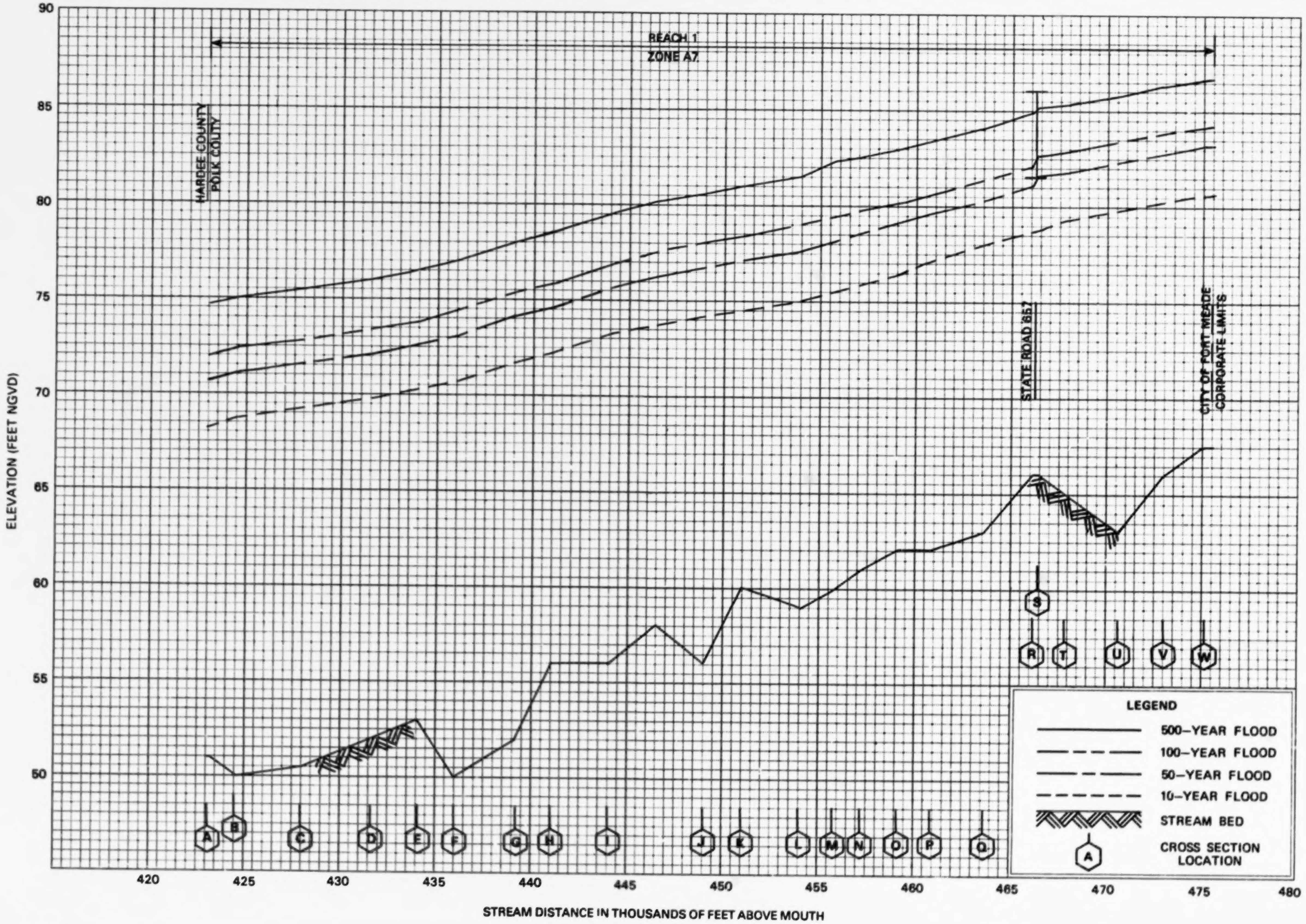


FLOOD PROFILES

NORTH PRONG ALAFIA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

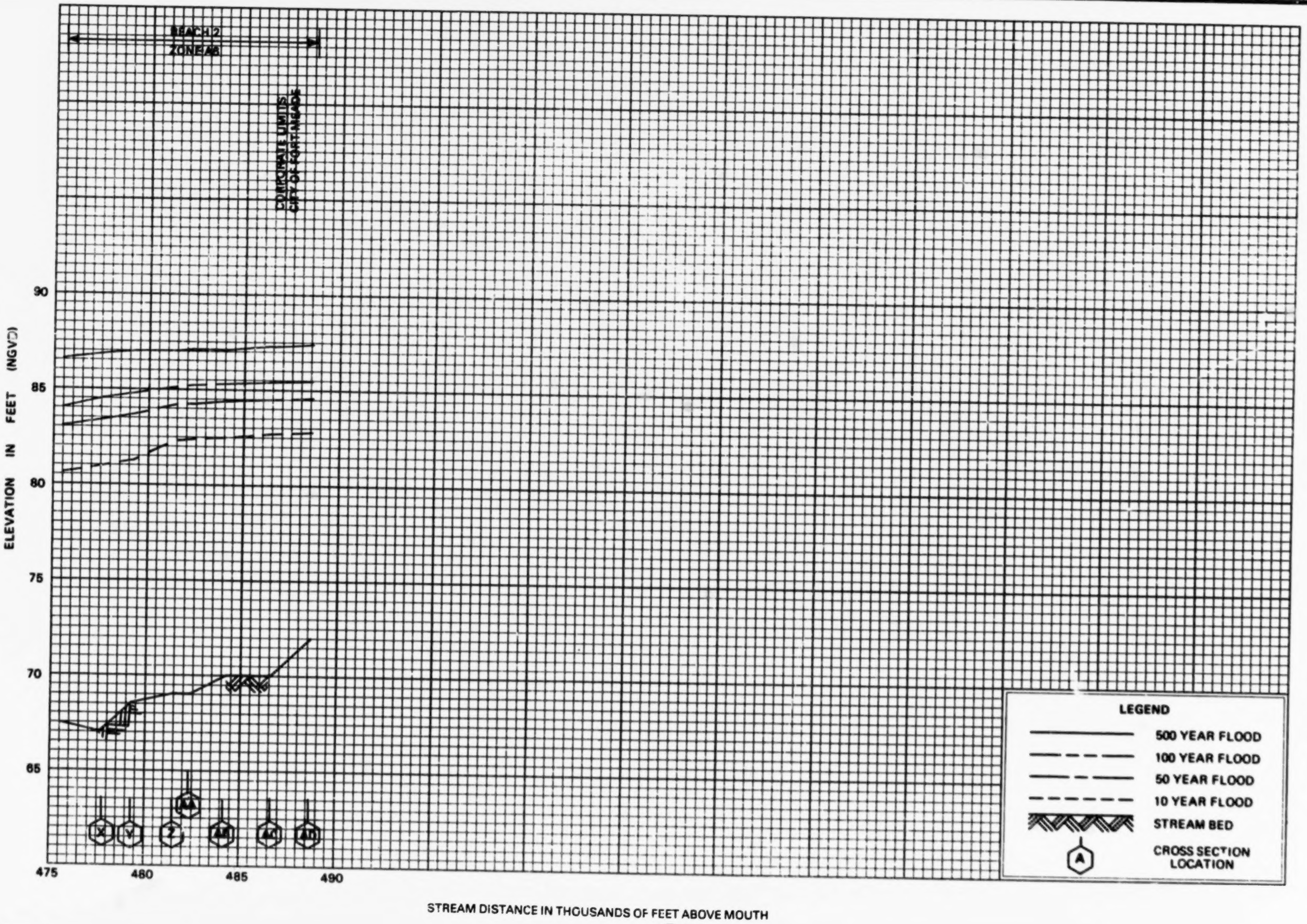


FLOOD PROFILES

PEACE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)



76

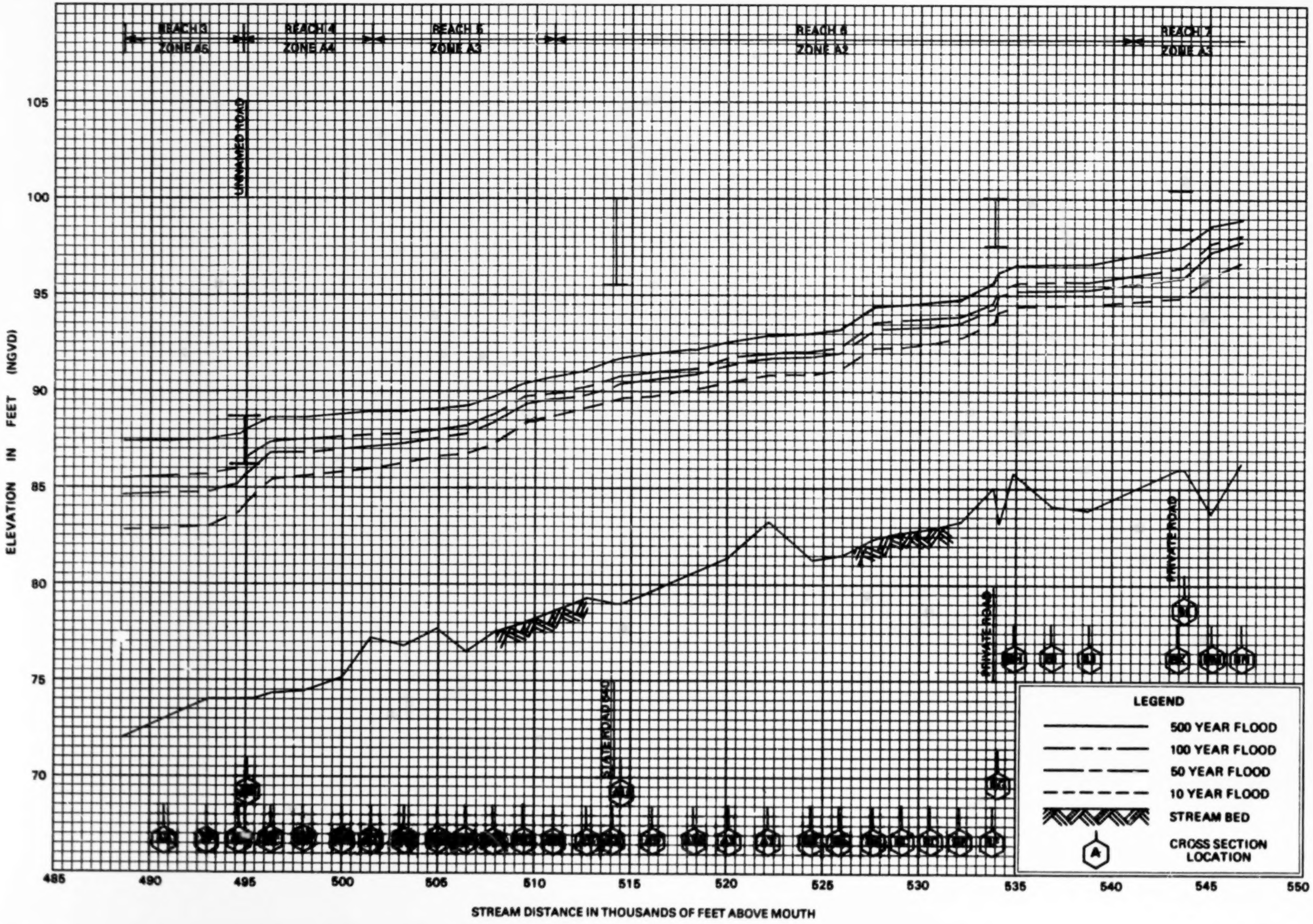
FLOOD PROFILES

PEACE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)



FLOOD PROFILES

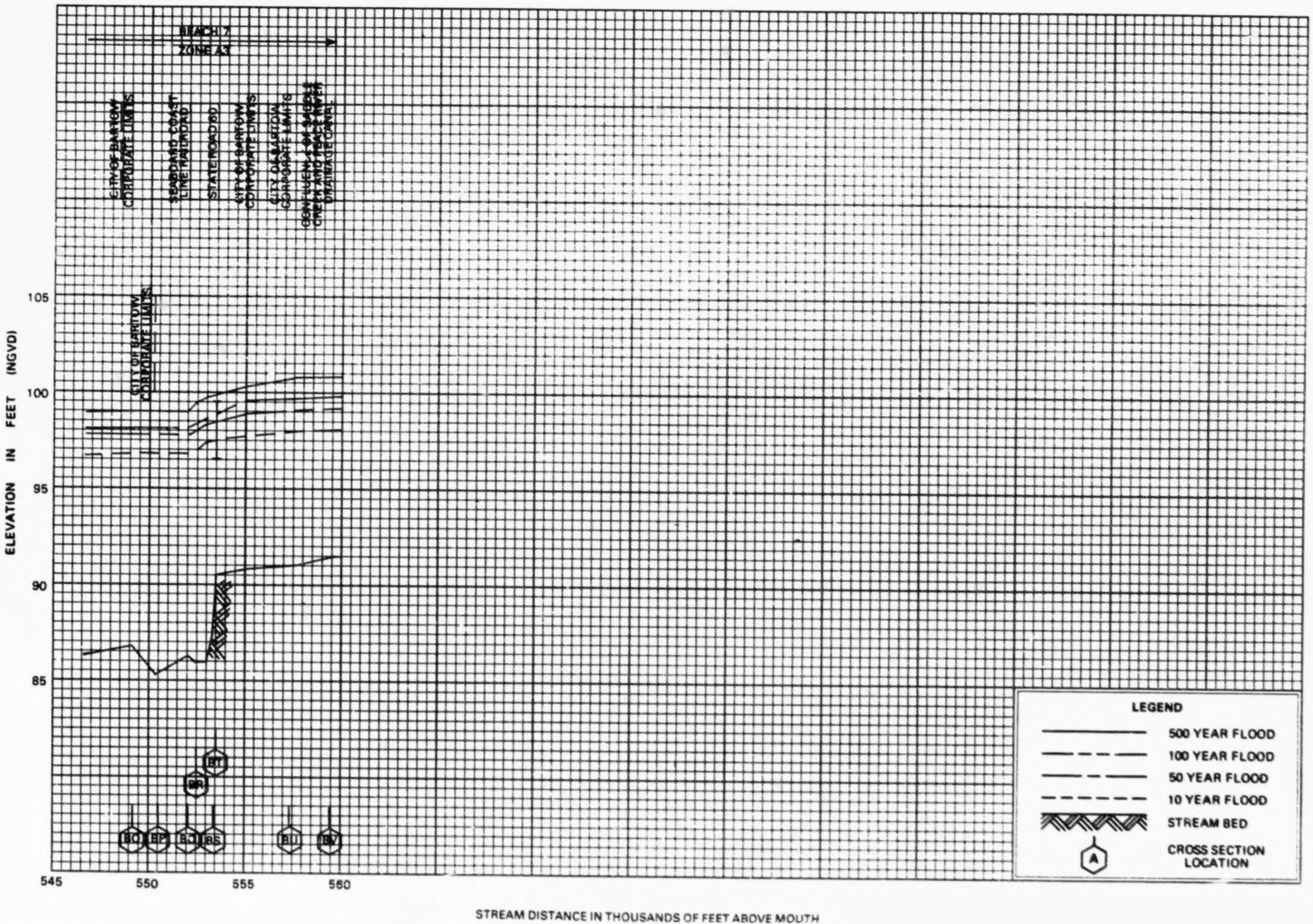
PEACE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

24P

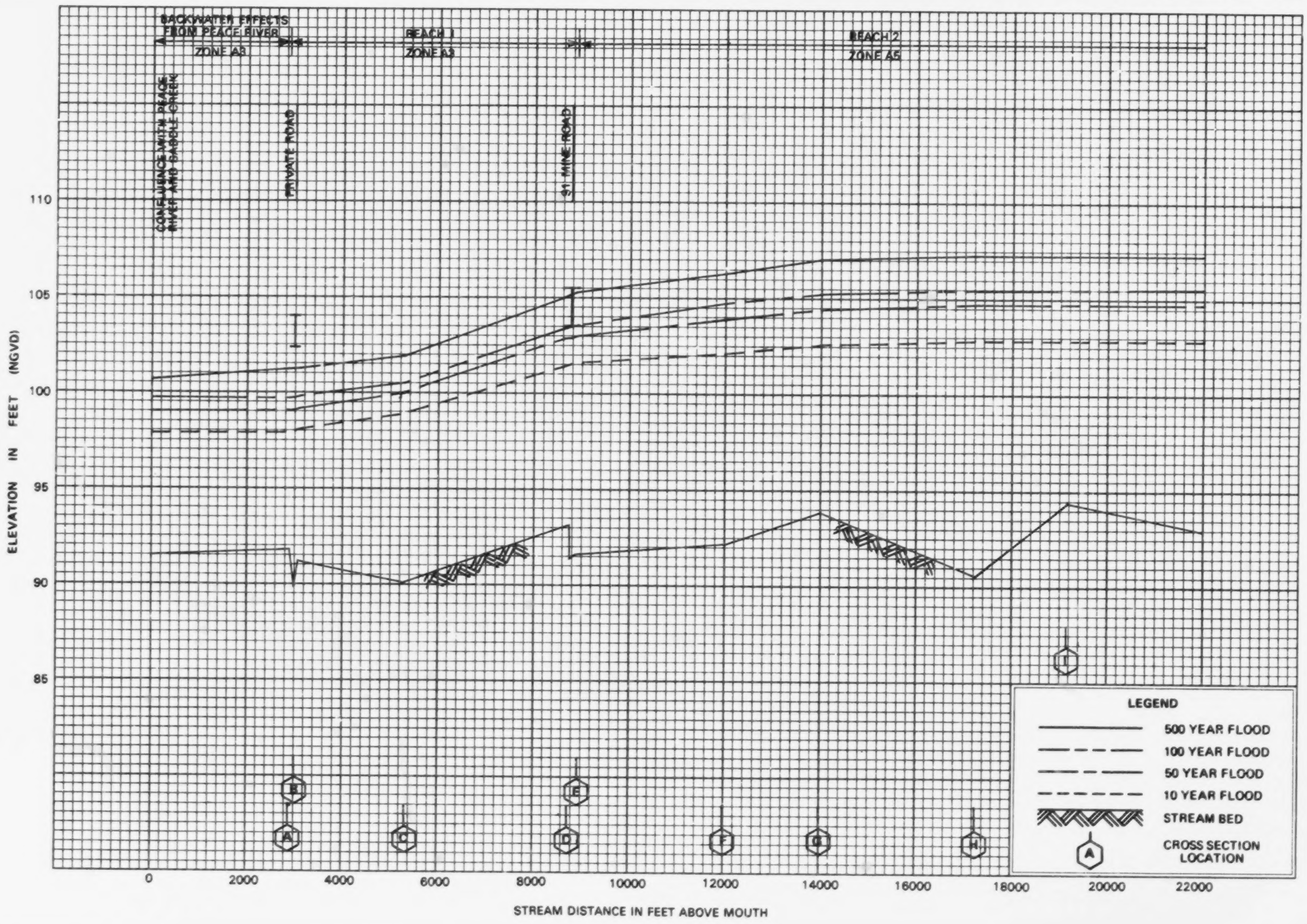


FLOOD PROFILES

PEACE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)



FLOOD PROFILES

PEACE RIVER DRAINAGE CANAL

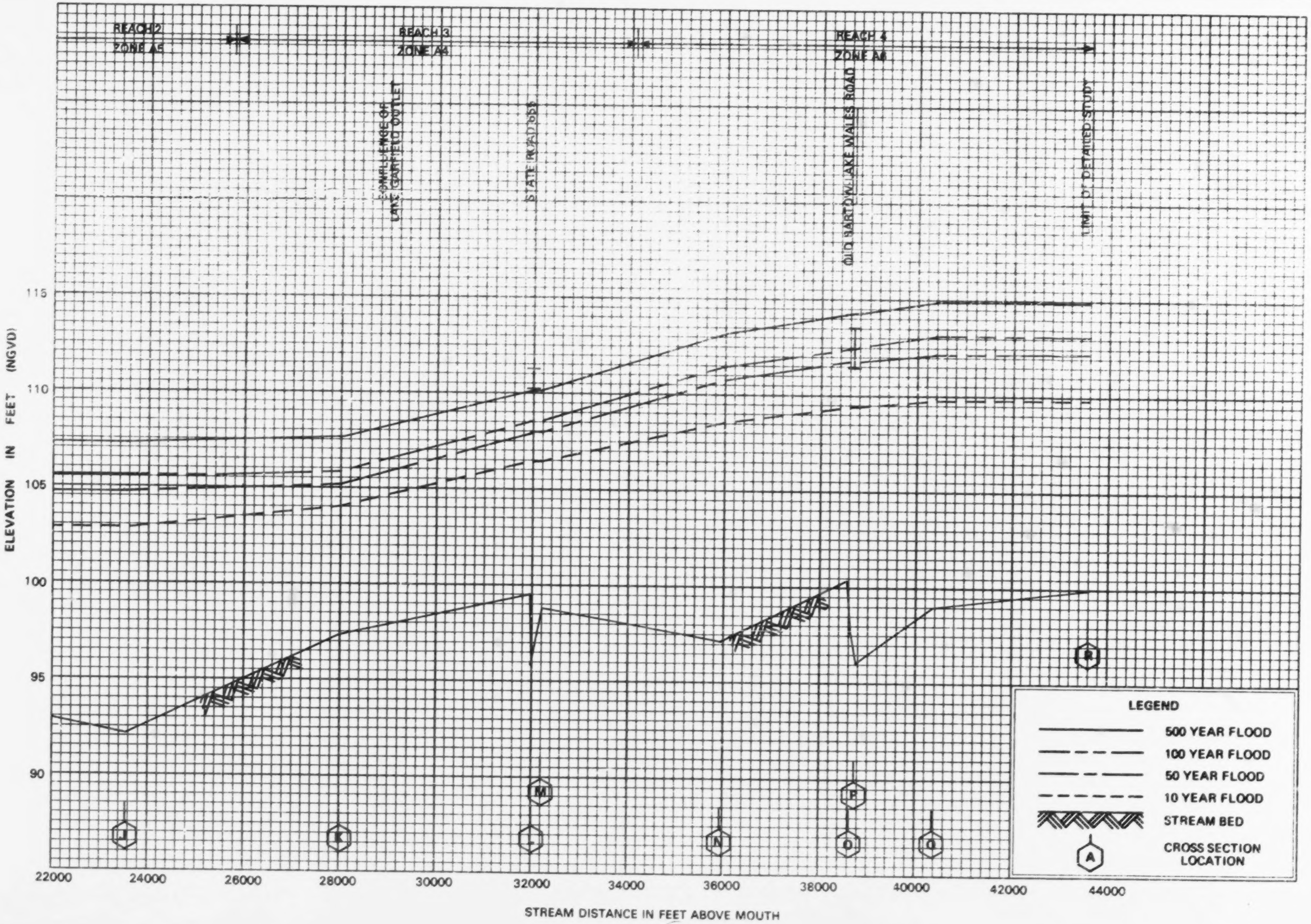
FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

26P

79



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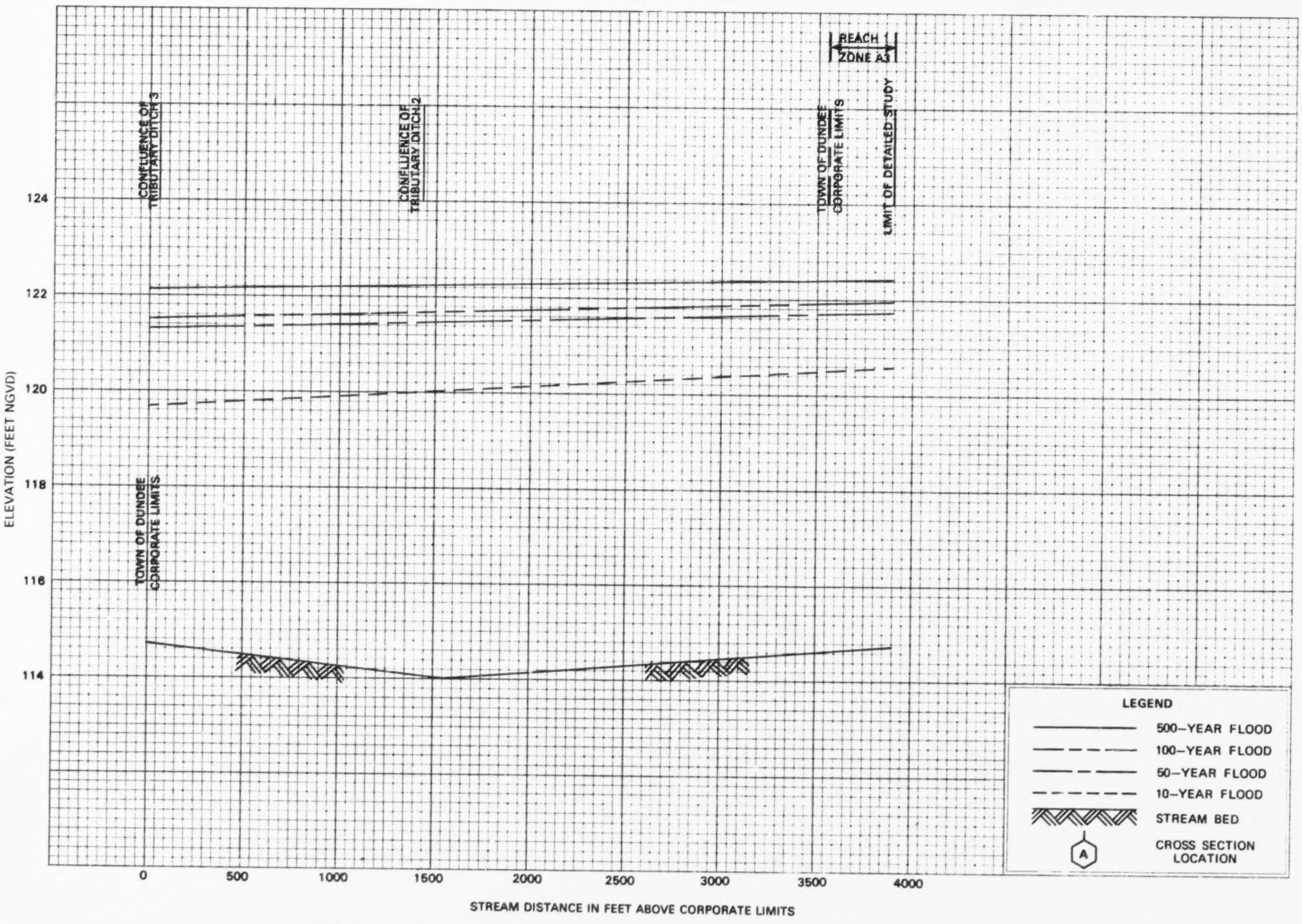
FLOOD PROFILES

PEACE RIVER DRAINAGE CANAL

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)



FLOOD PROFILES

PEACE CREEK DRAINAGE CANAL

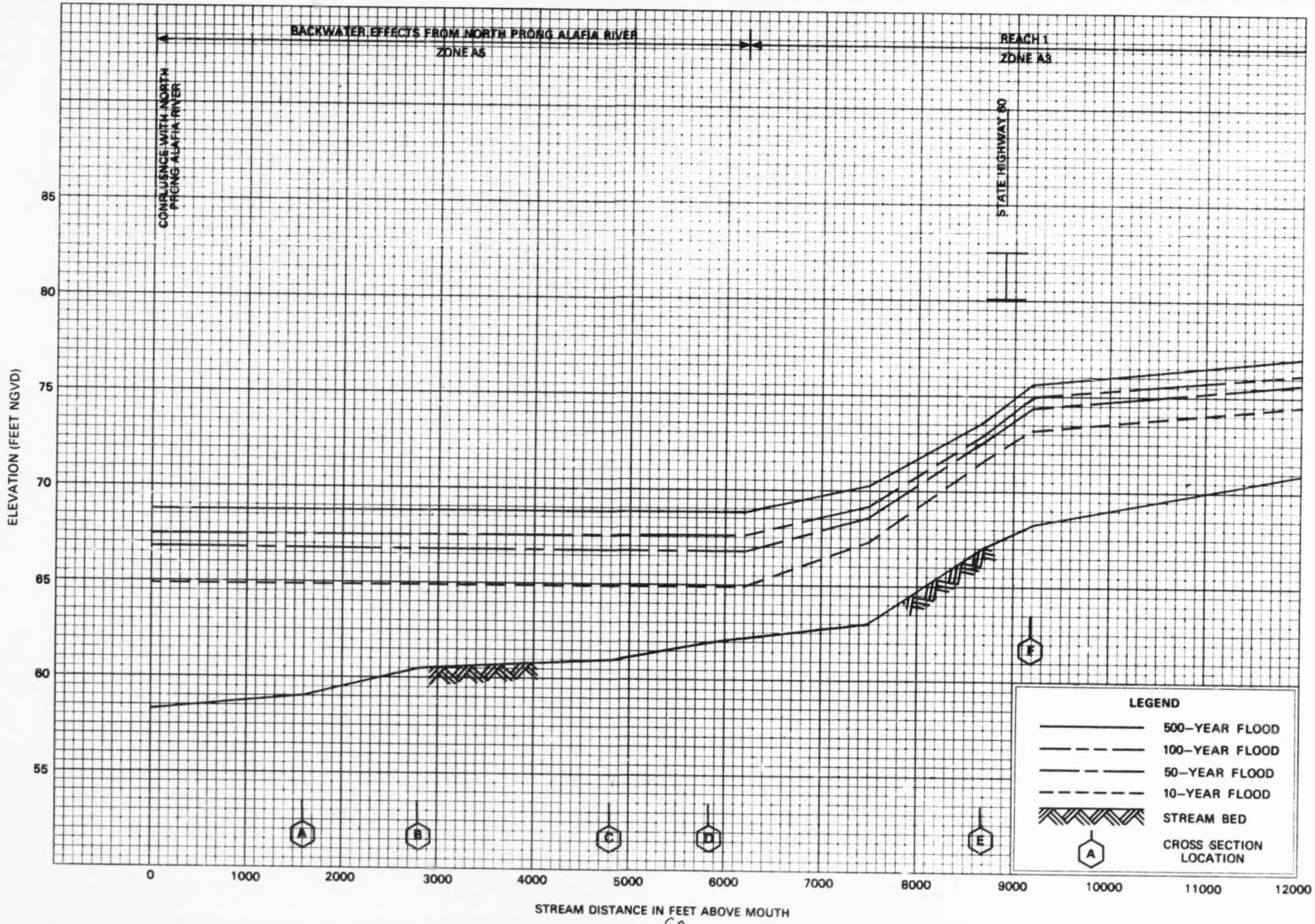
FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

28P

E1

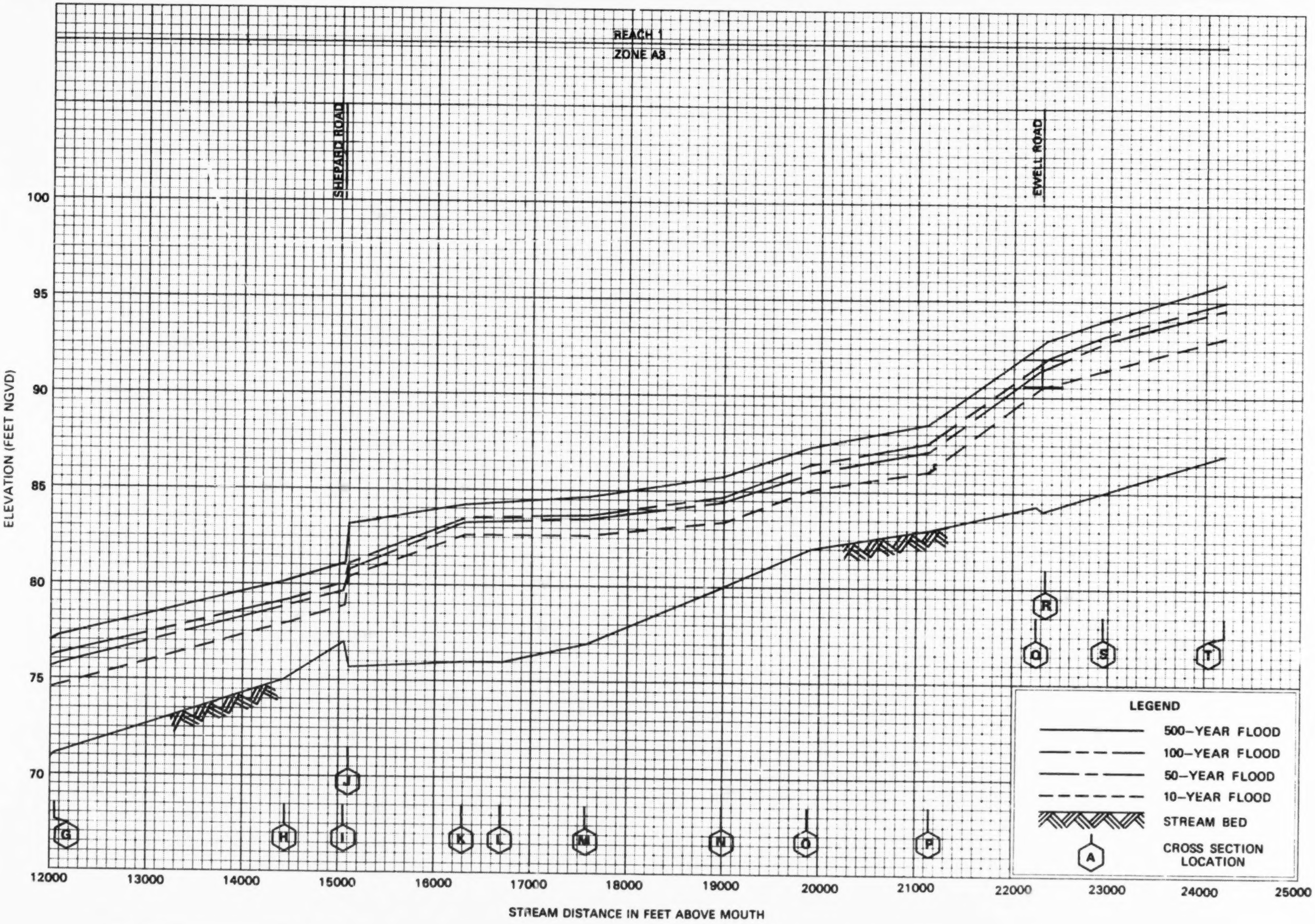


FLOOD PROFILES

POLEY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

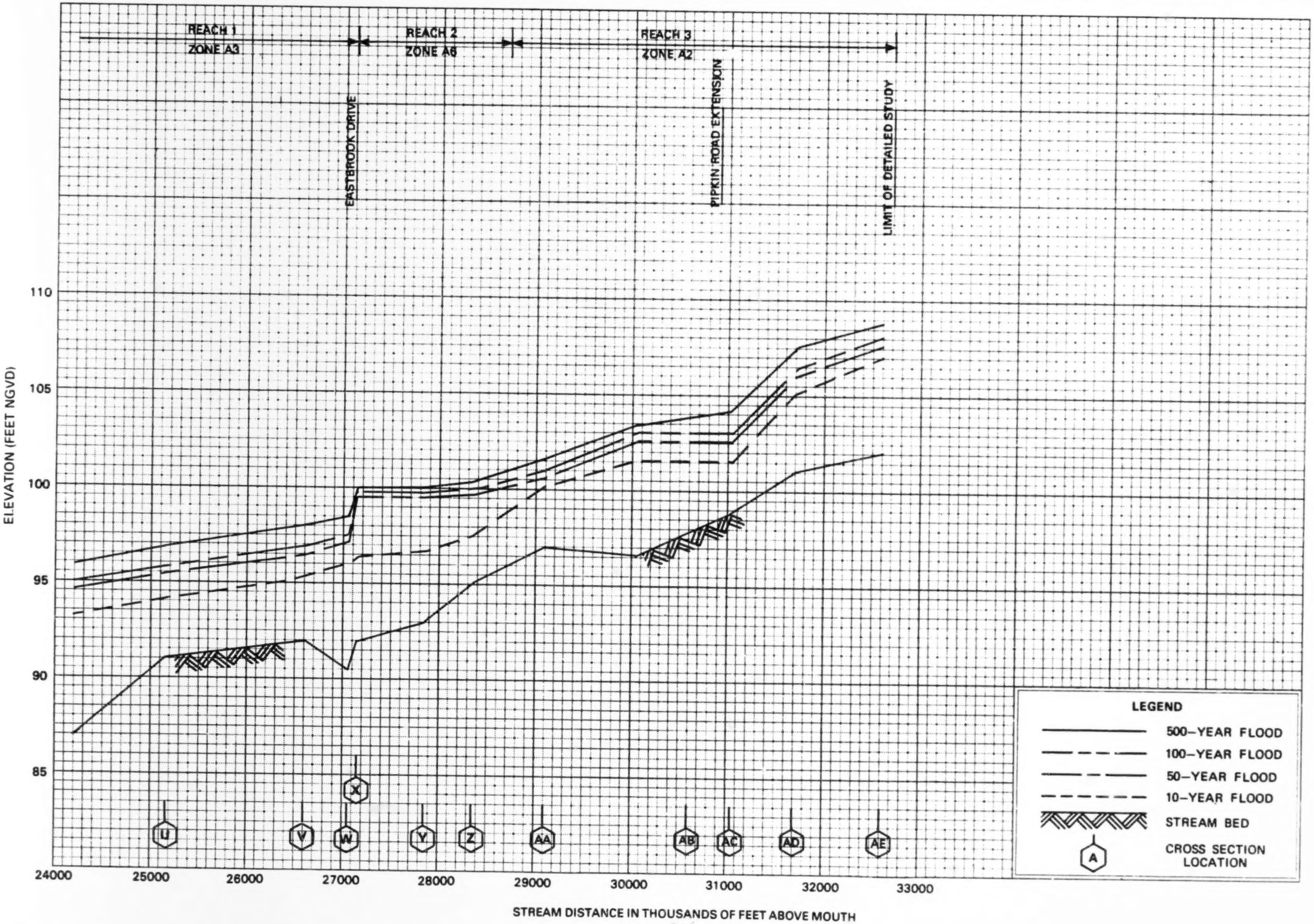


FLOOD PROFILES

POLEY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)



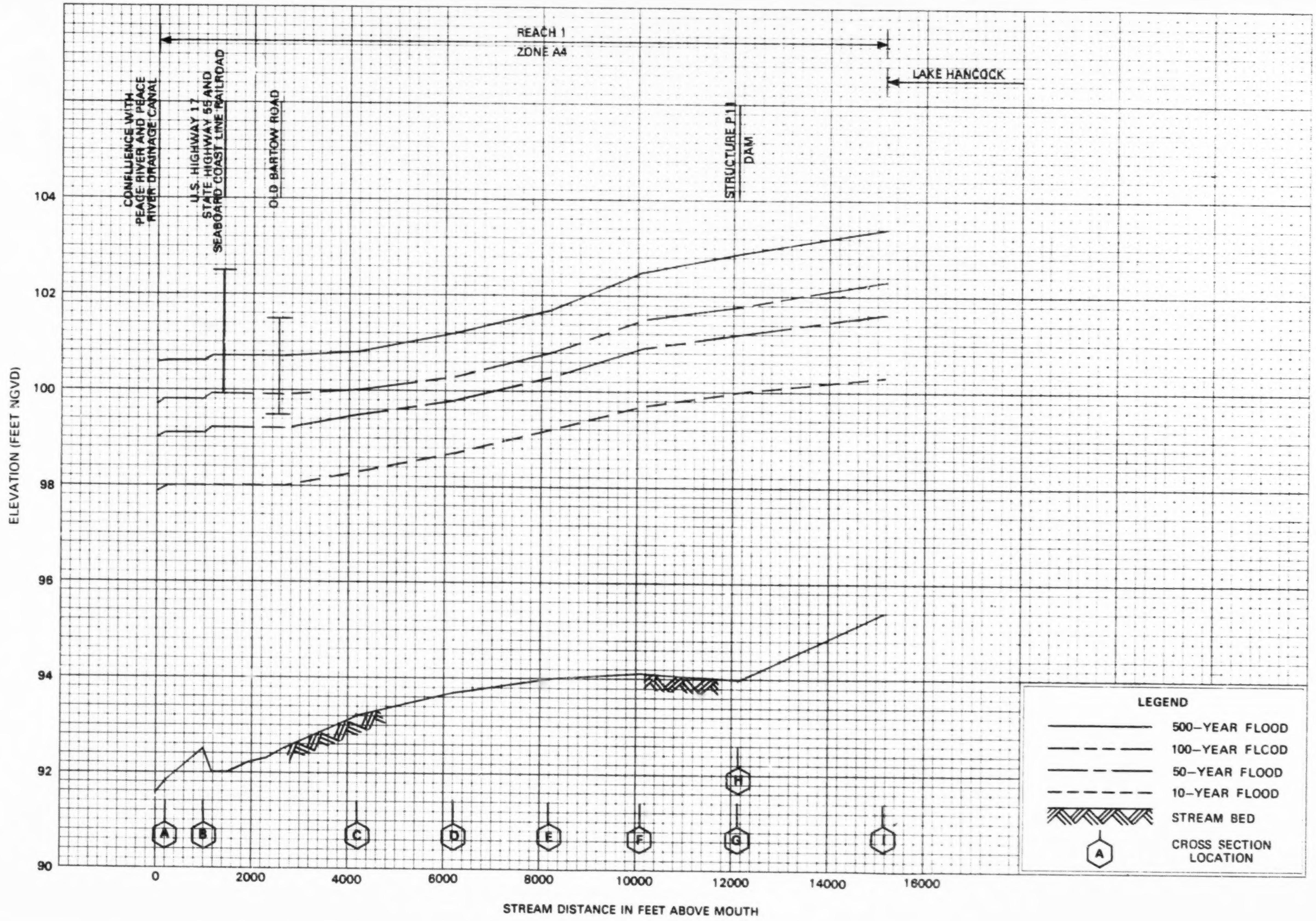
FLOOD PROFILES

POLEY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)



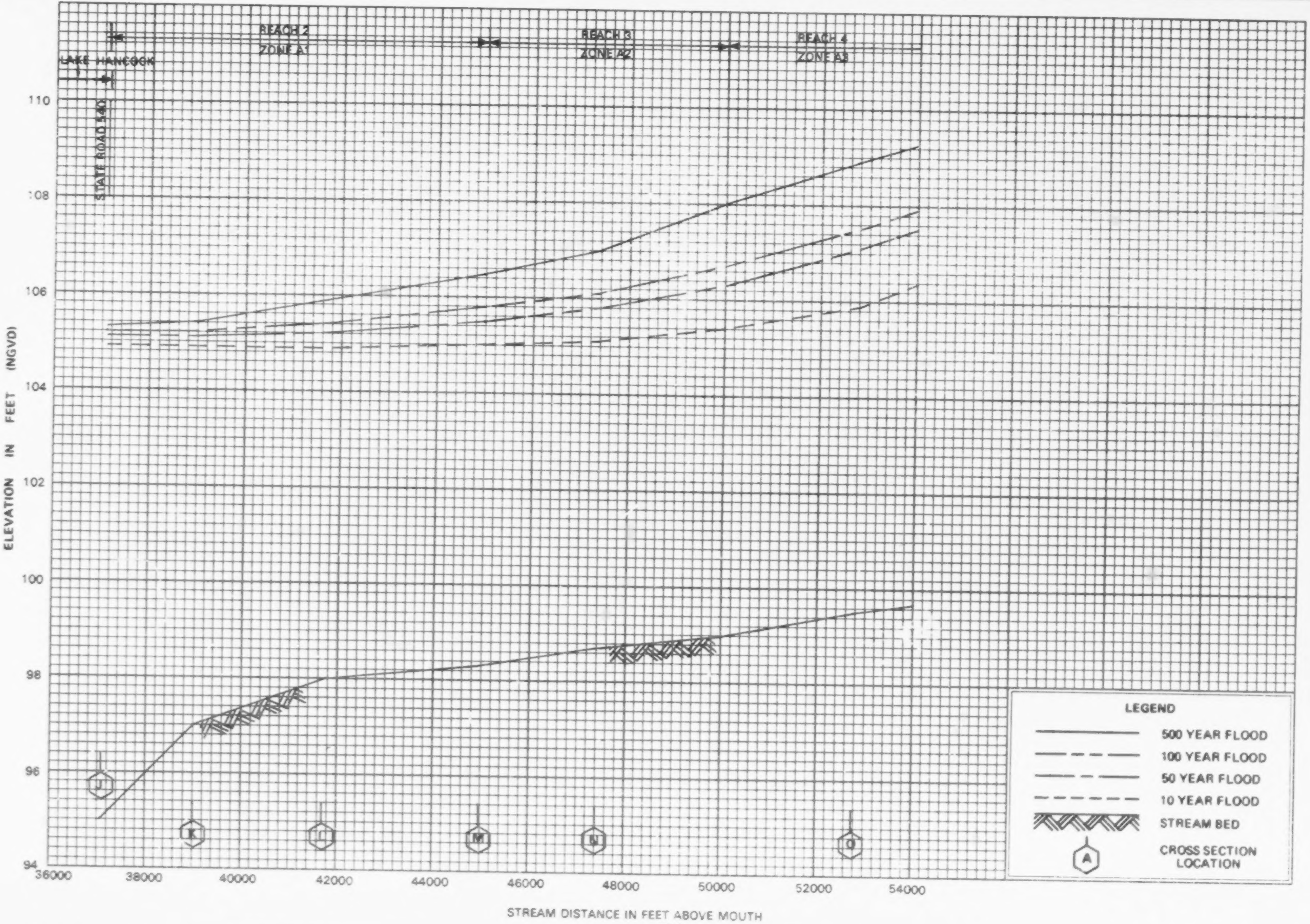
FLOOD PROFILES

SADDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)



86

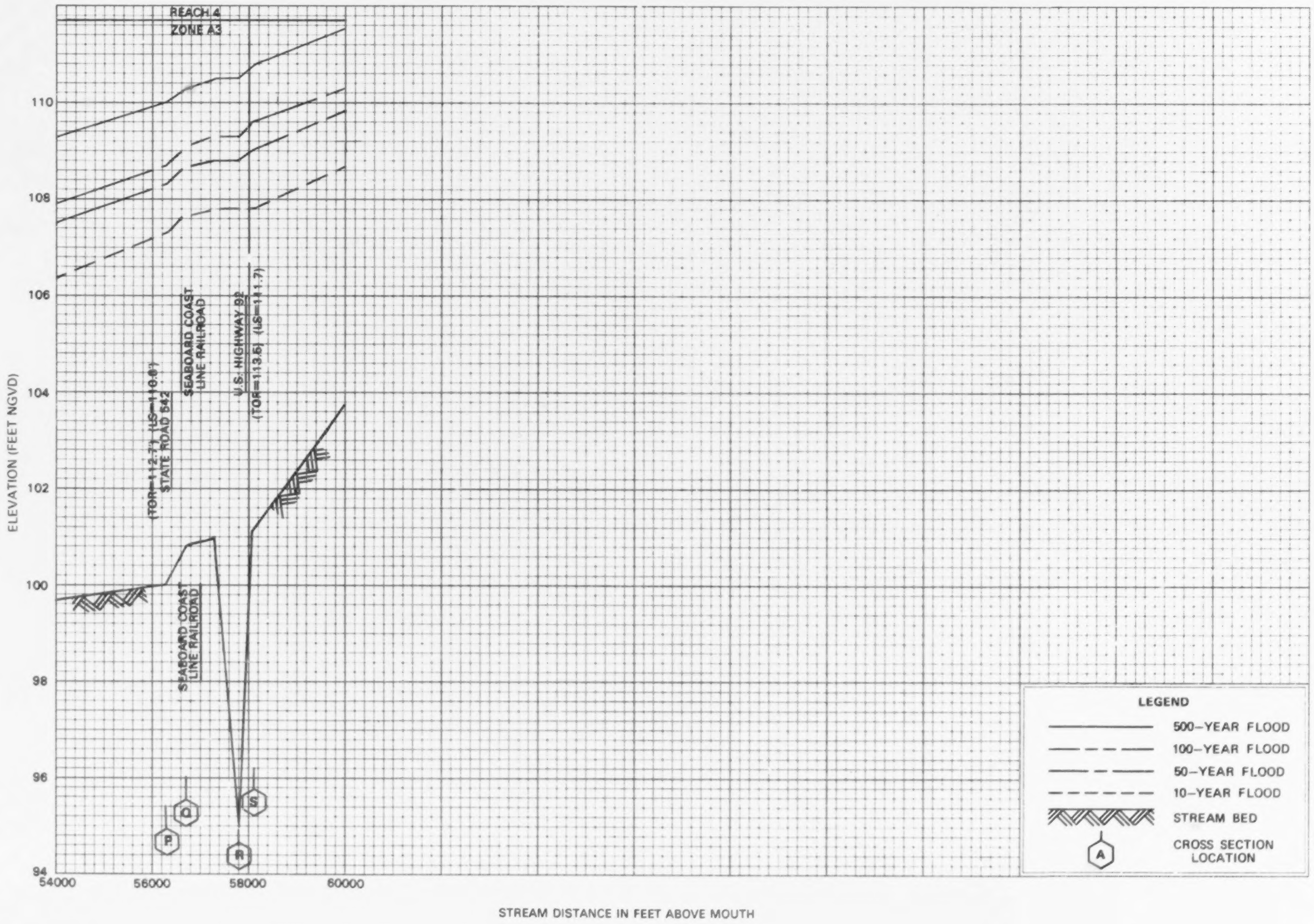
FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

FLOOD PROFILES

SADDLE CREEK

33P



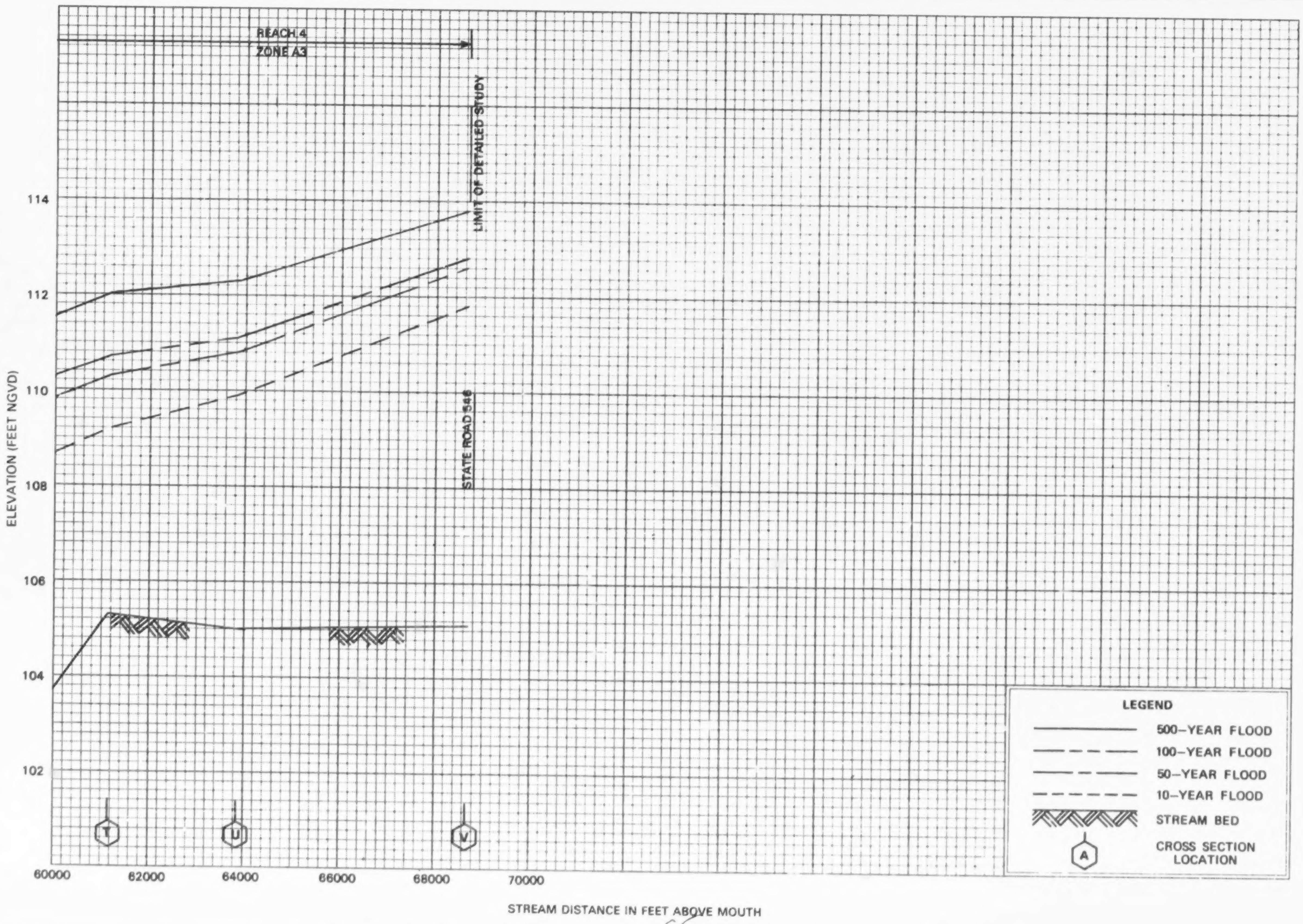
FLOOD PROFILES

SADDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)

34P



FLOOD PROFILES

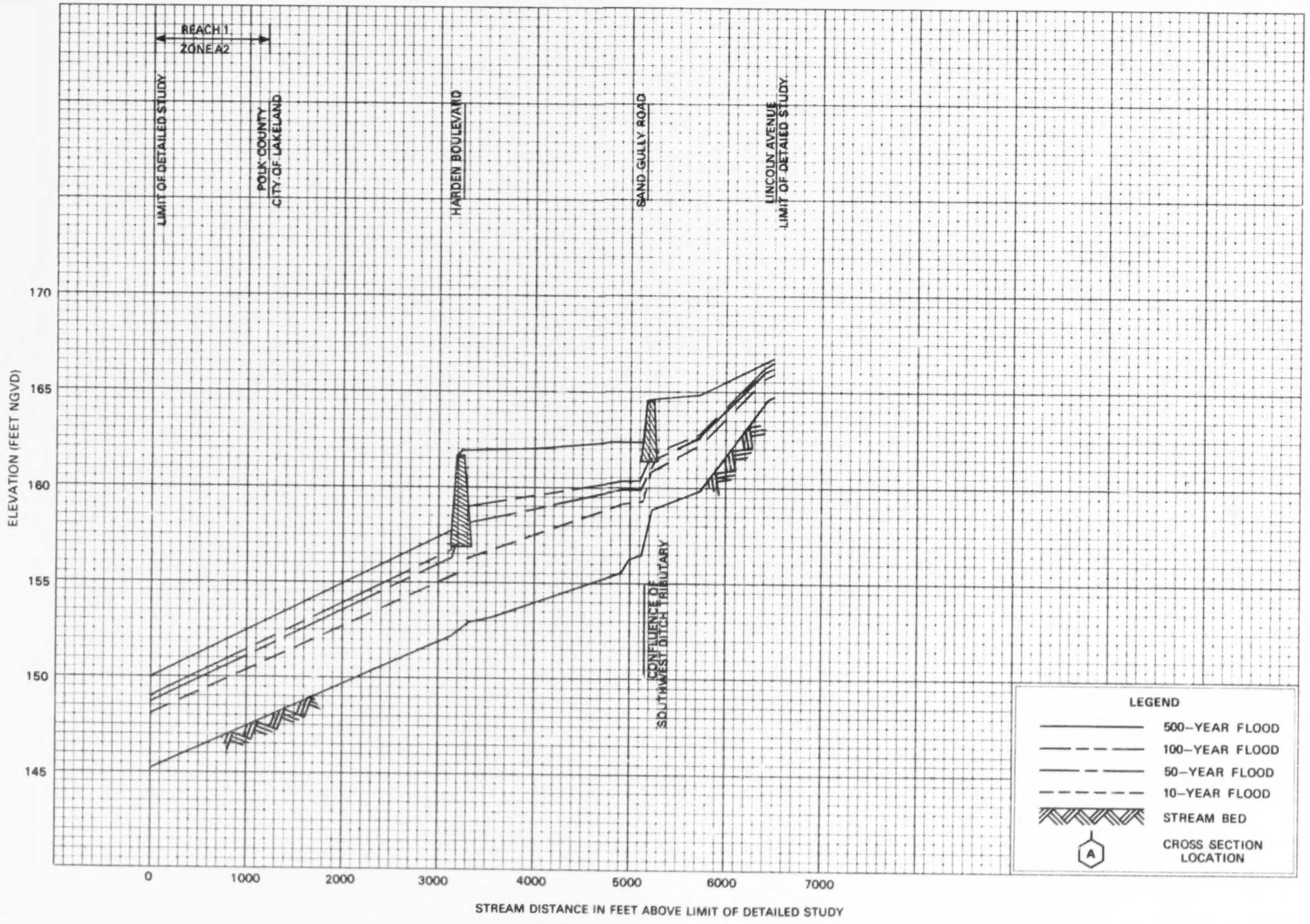
SADDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

35P

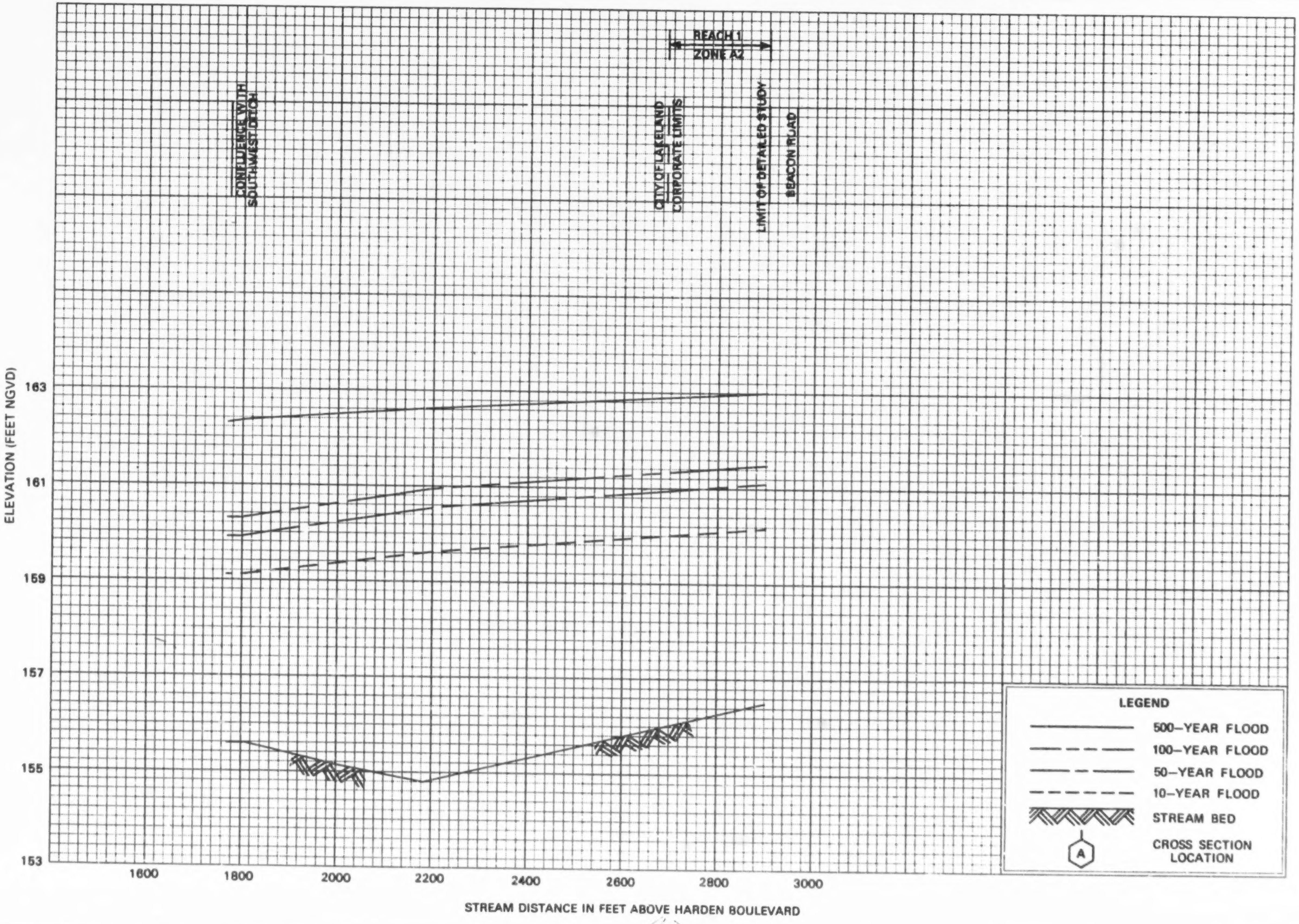


FLOOD PROFILES

SOUTHWEST DITCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
(UNINCORPORATED AREAS)



FLOOD PROFILES

SOUTHWEST DITCH TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

(UNINCORPORATED AREAS)

37P